

UNIVERSITY OF TASMANIA

School of Accounting and Finance

**Auditor Quality and the Presence of Audit Committees:  
An Association with Income Smoothing**

A dissertation submitted to the School of Accounting and Finance, University of  
Tasmania, in partial fulfilment of the requirements for the Masters degree in  
Commerce

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## STATEMENT OF ORIGINAL WORK

*The dissertation is the sole work of the author whose name appears on the title page. It contains no material which the author has previously submitted for assessment at the University of Tasmania or elsewhere. To the best of the author's knowledge, the dissertation contains no material previously written or published by another person except where reference is made in the text of the dissertation.*

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## ABSTRACT

Income smoothing is the intentional reduction of reported earnings fluctuations with respect to some "target" level or trend. This study investigates whether auditor quality or the presence of audit committees is associated with income smoothing by managers of Australian firms. It is motivated by the lack of evidence of an association between income smoothing and corporate governance structures. Discretionary accruals, estimated using a cross-sectional accruals model, are used as a proxy for earnings management, and smoothing is measured as the excess of (a) the difference between actual reported operating profit before taxes and targeted operating profit before taxes over (b) the difference between targeted operating profit before taxes and pre-managed earnings. The smaller the excess, the more smoothing takes place. This study is mostly inconclusive about whether auditor quality is associated with income smoothing. In contrast, the presence of an audit committee has no association with smoothing. While they are inconclusive, the results generally do not support predictions that the more firms use audit committees and high quality auditors, in combination, the less likely they are to smooth reported income. Australian firms tend to smooth reported earnings more than their US counterparts. While the difference may be attributable to international differences in requirements for the use of an audit committee, again the results are not conclusive.

## TABLE OF CONTENTS

	Page
Statement of original works	ii
Acknowledgement	iii
Abstract	iv
List of figures and tables	vii
 Chapter 1: Introduction	 1
1.1 Motivation	4
1.2 Objectives	5
1.3 Methodology	8
1.4 Results	8
1.5 Implications	9
1.6 Structure of the thesis	10
 Chapter 2: Literature review and institutional background	 11
2.1 Introduction	11
2.2 Background	11
2.3 Reasons for income smoothing	14
2.4 Corporate governance: Institutional differences	20
2.5 Conclusion	28
 Chapter 3: Hypotheses development	 29
3.1 Introduction	29
3.2 Agency theory	29
3.3 The audit committee	32
3.4 External auditing	35
3.5 Relationship between audit committees and external auditing	39
3.6 Corporate governance: Audit committee and auditing regulations	41
3.7 Conclusion	45

Chapter 4: Method	46
4.1 Introduction	46
4.2 Sample selection	46
4.3 Estimation of discretionary accruals	49
4.4 Income smoothing	50
4.5 Research design and measurements	53
4.6 Conclusion	60
Chapter 5: Analysis of results	61
5.1 Introduction	61
5.2 Results	61
5.3 Discussion	76
5.4 Sensitivity analysis: An alternative test of income smoothing	81
5.5 Sensitivity analysis: Unrestricted sample	88
5.6 Conclusion	90
Chapter 6: Summary and Conclusion	91
6.1 Introduction	91
6.2 Regulatory background	91
6.3 Predictions of the study	92
6.4 Method	92
6.5 Results and Conclusions	93
References	95

## LIST OF TABLES AND FIGURES

Table 1	Sample selection
Table 2	Descriptive statistics used to calculate discretionary accruals and descriptive statistics of dependent and independent variables in the period between 1993 - 1995
Table 3	Pooled correlation matrix
Table 4	Pooled univariate tests: independent variables and their association with smoothing
Table 5	Logit analysis of explanatory variables associated with smoothing
Table 6	Logit analysis of explanatory variables associated with smoothing: by industry
Table 7	Logit analysis of explanatory variables associated with positive discretionary accruals
Table 8	Distribution of firms by sign of discretionary accruals and predictive indicator variable Smooth1b
Table 9	Logit analysis of explanatory variables including smoothing variable, Smooth1b, in association with positive discretionary accruals
Table 10	Logit analysis of explanatory variables associated with smoothing in all industries classification for the US sample
Figure 1	Income smoothing: $ TargetY_{it} - Y_{it}  <  TargetY_{it} - NDE_{it} $
Figure 2	The use of discretionary accruals to adjust reported earnings to target earnings, subject to GAAP limitations, for measuring income smoothing.

## **Chapter 1: Introduction**

By definition, income smoothing is driven by incentives to mitigate volatility in the reported earnings. Income smoothing dampens the oscillations of earnings numbers around their trend. Ma (1988) argues that smoothing reported earnings may be defined as the intentional reduction of earnings fluctuations with respect to some “normal” level. He finds that for US commercial banks, management tends to raise (lower) loan provisions in periods of high (low) operating income.

Income smoothing is the result of either real or artificial earnings management. Real income smoothing involves managing the underlying transactions that give rise to reported earnings (see Ronen and Sadan, 1981). It involves altering the timing of the occurrence of real transactions to achieve the smoothing objective. These transactions include capital asset acquisitions, discretionary spending on advertising, research and maintenance or the recognition of sales transactions. Timing the recognition of real transactions might be considered a special case of real smoothing. For example, firms may delay (after shipment) or accelerate (before shipment) the recognition of sales transactions at year-end. There are relatively few studies detecting real smoothing, primarily because there are no disclosures to signal its presence (Bitner and Dolan, 1998).

This study focuses upon artificial smoothing. Artificial income smoothing reflects the use of accounting techniques to smooth the level of earnings reported. Artificial



income smoothing is achieved by using discretionary accounting procedures that allow the shifting of costs and/or revenues from one accounting period to another. This type of smoothing is more readily identifiable than real smoothing because the use and effects of artificial smoothing tools generally are disclosed in the financial statements. There is a variety of specific actions that can facilitate artificial smoothing. Each affects either accounting policy choice or accounting estimates. Examples of changes in accounting procedures include changes in methods of inventory valuation, and depreciation. Changes in accounting estimates may involve decisions surrounding bad debts, capital assets' lives, litigation costs, obsolete inventory, or pension assumptions.

The general practice of income smoothing has been documented in the accounting literature. Most research has been conducted using US data (e.g., Ronen and Sadan, 1981; Moses, 1987; Ma, 1988; Hunt, Moyer and Shevlin, 1995; Defond and Park, 1997), but there are several studies using data relating to non-US firms (Saudagaran and Sepe, 1996; Booth et al., 1996; and Young 1998). The extant literature reports that smoothing is in common usage. These studies report that firms' characteristics such as, management compensation, leverage, firm size and signalling of future cash-flows have been consistently associated with smoothing

Booth et al., (1996) document that Finnish accounting legislation offers more ways to intentionally smooth financial accounting income than are available to manage taxable income. For example, while the Accounting Act does not regulate the amount of annual depreciation and does not specify any particular depreciation method, the Business Tax Act contains detailed instructions on the maximum depreciation rates for machinery

and plant (30 percent and 10 percent, respectively). Secondly, firms are allowed to create untaxed reserves, such as an inventory reserve, a bad debt reserve, an operational reserve, a warranty reserve and an investment reserve. Thirdly, firms do not have to record their pension liabilities contributed to pension foundations on an accrual basis, and can thereby affect reported earnings figures<sup>1</sup>. Not all this accounting flexibility exists in all countries.

In a UK context, Young (1998) reveals that income smoothing considerations are the major variant influencing differences in managerial accounting discretion. Young suggests that reasons for income smoothing could be the manager's desire to signal future positive cash flow performance. Young (1998) also reports variation over time in the relationship between accounting policy decisions and leverage, where that variation may be due to changing probability of debt covenant violation relating to changes in the macroeconomic climate. The Finnish and UK evidence implies that different countries' economic and regulatory regimes are likely to create different incentives to smooth in any given period.

In the Australian context, there is strong evidence that large listed companies are actively engaged in income smoothing (e.g., Craig and Walsh, 1989; Godfrey and Jones, 1999). Craig and Walsh (1989) find that the larger Australian firms are more

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<sup>1</sup> Other examples as follows: firms are allowed either to expense their exchange losses in the year the exchange rate has changed, or to capitalize them to the balance sheet until the corresponding amount has been paid; then expense or capitalize the costs relating to their research and development activities; and they are allowed to deduct income tax from earnings in income statements or from retained profits in the balance sheet. They can also add certain tax-free revenues, such as dividends, directly to the shareholders' equity without presenting them in the income statement.

likely than small firms to use extraordinary items adjustments to smooth reported operating earnings.

Their results are consistent with Moses' (1987) study using a US sample, but not supported by Godfrey and Jones (1999), who use an Australian sample. Nor are they consistent with results from Craig and Walsh's Australian study, and the UK & Canadian study, Saudagaran and Sepe (1996). Godfrey and Jones (1999) give evidence that companies with highly unionised workforces, indicating labour-related political costs, are more likely to smooth earnings via extraordinary item classification.

The conflicting results of Moses (1987), Craig and Walsh (1989), Saudagaran and Sepe (1996), and Godfrey and Jones (1999) suggest that international differences may affect managers' incentives to smooth income. Indeed, on the basis of their UK/Canadian study, Saudagaran and Sepe (1996) conclude that size could proxy for different phenomena in the US and other countries.

### ***1.1 Motivation***

The lack of observed association between income smoothing and the impact of corporate governance motivate this investigation as to whether the requirements to form audit committees provide incentives for Australian managers to smooth reported earnings. The research questions addressed by this thesis are (1) Do Australian firms smooth income? (2) Does the presence of an audit committee affect the propensity of firms to smooth income? (3) Is audit quality associated with levels of artificial income smoothing? (4) Are income smoothing incentives similar for Australian and US firm

managers, given that the two countries have different regulations concerning audit committees and responsibility to detect fraud?

There is a dearth of studies of national differences in corporate governance in relation to income smoothing. The extant studies on corporate governance mostly focus on different legal, financial, and cultural factors (e.g., Rubach and Sebor, 1998; Maclean, 1999). Meanwhile, some studies suggest earnings management might depend on the effectiveness of corporate governance mechanisms, which are known to vary across firms (Dechow et al., 1996 and Beasley 1996). Dechow et al. (1996) investigate the governance attributes of firms subject to SEC enforcement actions, Beasley (1996) examines the link between board composition and financial statement fraud, and Peasnell et al. (1998) examine further the board effectiveness in constraining earnings management. To date, however, relatively little attention has been paid to the way in which income smoothing might be associated with different patterns of governance in relation to monitoring and controls. Another motivation for this study is Porter's (1994) discussion about international comparison of auditing standards of the US and Australia. The present study empirically examines her conjectures about different requirements to detect fraud, in relation to income smoothing.

## ***1.2 Objectives***

This thesis examines factors associated with income smoothing. It provides insights about how the presence of an audit committee and auditor quality by managers of Australian firms are associated with management of reported earnings through the manipulation of discretionary accruals. Australian public companies are currently not

required to form audit committees, either by statute or by the Australian Stock Exchange. However, in the US, the requirement has become mandatory<sup>2</sup>. Unlike Australia, the main movement has increased auditors' duty to detect fraud in response to criticisms that many US litigation cases are due to audit failure to detect fraud (see Porter, 1994).

Agency theory explains the role of audit committees and auditors. Agency costs arise from information asymmetries between owners/debtholders/other parties with claim against firm, and managers. Contracts reduce these information asymmetries by limiting management ability to manipulate earnings only if doing so will (a) maximize firm value through the reduction of the agency costs that result from these information asymmetries; and (b) reduce opportunistic earnings management that increases information asymmetry. One way to limit managements' ability to manipulate earnings is to increase the costs associated with making opportunistic accounting adjustments. However, the choice to limit managerial discretion is also influenced by other management decisions associated with the firm's capital<sup>3</sup> and organisational structure (see Watts and Zimmerman, 1990). As a consequence, management has more firm-specific information than owners/debt-holders. This gap enables managerial opportunism (Becker et al., 1998).

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<sup>2</sup> These committees have to comprise external directors only, but in Australia, audit committees should consist of the majority of non-executive directors.

<sup>3</sup> Agency theory recognises that the interests of managers and shareholders may conflict and that, left on their own, managers may make major financial policy decisions, such as the choice of a capital structure that is sub-optimal from the shareholders' standpoint (Mehran, 1992).

Audit committees and external auditing can reduce opportunistic reporting by managers [see Watt and Zimmerman (1986), DeFond and Jiambalvo (1991), Anderson et al., (1993)]. Based on the premise that firms with audit committees are more frequently involved in evaluating the possibility of earnings management, it is predicted that firms with audit committees are less likely to smooth earnings than firms without audit committees.

Recent research documents positive associations between potential agency costs and choice of top tier auditing firms (e.g., Becker et al., 1998; Francis et al., 1999). It is argued that a Big Six auditor appointment signals that the opportunity to transfer wealth from lenders, shareholders, or other claimholders was not taken, because it would otherwise be detected and reported by a high quality auditor. The top tier auditor has high reputational capital at stake for any poor audit performance. On that assumption, earnings management is less likely to occur when a Big Six auditor is appointed. It is predicted that firms that use top tier auditors are less likely to smooth earnings than firms that do not use top tier auditors.

It is also hypothesised that since effective communication between audit committee members and auditors can enhance the oversight function in corporate governance, audit committee members tend to support auditors when there is disagreement between auditors and management in relation to aggressive earnings management. This argument treats top tier auditors and audit committees as complementary forms of corporate governance and leads to the prediction that firms with audit committees and

big six auditors are less likely to smooth earnings than firms without the combined audit committee and top tier auditor governance.

In particular, this thesis also predicts that since Australian regulations are less stringent than US requirements to form an audit committee, Australian firms have more opportunities and are more likely to smooth earnings than US firms.

### ***1.3 Methodology***

The predicted associations between income smoothing and corporate governance attributes are tested by regressing measures of earnings management on proxies for incentives to smooth earnings, as reported in Subramanyam (1997). Discretionary accruals, estimated using a cross-sectional version of a model developed in Jones (1991), are used as a proxy for earnings management. Dechow, Sloan and Sweeney (1995) have evaluated several commonly used accrual-based models for detecting earnings management and they find that all variations of the Jones (1991) model appear well-specified in a random sample of firms, including the model used in this thesis. Managers use discretionary accruals to reduce the volatility of (a) the difference between actual operating profit before taxes and targeted operating profit before taxes, and (b) the difference between target earnings and pre-managed earnings.

### ***1.4 Results***

The results are inconclusive as to whether firms with top tier auditors are less likely to smooth income than firms without top tier auditors. However, there is evidence that the presence of audit committees is unassociated with income smoothing.

Generally, the results do not support predictions that the more Australian firms use audit committees and high quality auditors, in combination, the less likely they are to smooth reported income. The prediction that US firms smooth less than Australian firms is supported. While the difference may be attributable to international differences in requirements for the use of an audit committee, again the results are not conclusive. Overall, the study finds mixed, and only weak support for the use of audit-related corporate governance in the reduction of income smoothing.

### ***1.5 Implications***

The study indicates that auditor quality and the presence of audit committees are unassociated with income smoothing or its reduction. This has implications for the effectiveness of the alternative forms of auditing-related corporate governance.

Also, the findings can alert financial statement users not to rely upon audit-related controls over earnings management when interpreting financial data. Regulators, in deciding the extent to which they should monitor and control managers' actions in order to protect external parties such as present and potential investors, can also use these findings in determining the disclosure of financial reporting and governance practices. Finally, the findings may contribute insight into international differences and whether they should be accommodated in order to promote international harmonisation of accounting or auditing regulations.



### ***1.6 Structure of the Thesis***

The balance of the thesis is structured as follows. Chapter 2 examines the literature and provides an institutional background to the investigation of income smoothing in Australia. Chapter 3 develops the arguments explaining how variation in regulatory settings of audit committees and external auditing create incentives to smooth earnings. Chapter 4 outlines the research design. Chapter 5 presents results and analyses of the results. Finally, summary, conclusions and implications follow in Chapter 6.

## **Chapter 2: Literature Review and Institutional Background**

### ***2.1 Introduction***

This chapter reviews much of the literature relevant to the thesis and explains the Australian auditing framework. In the background section, previous studies of corporate governance are examined. Section 2.3 discusses reasons for income smoothing according to prior studies of income smoothing. Section 2.4 outlines the requirement for firms to have audit committees, and the role of external auditing in Australia and the US, and section 2.5 concludes the chapter.

### ***2.2 Background***

In practice, the corporate governance focus has moved from the concept of good governance to practical issues of how to harness the oversight process to accomplish high quality corporate financial reporting. “While earnings management is not necessarily inappropriate, it can become abusive when it obscures the true financial performance of the company” (Blue Ribbon, 1999). In the same sense, a number of publicised financial reports have been criticised for their application of earnings management in order to satisfy financial analysts and to intentionally smooth earnings. The Chairman of the SEC, Levitt (1998) mentions some of the inappropriate specific practices of US firms, such as :

- Deliberately overstating one-time “big bath” restructuring charges in order to provide a cushion to satisfy future earnings.
- The misuse of the acquisition accounting, specifically inadmissible write-off of acquired in-process research and development, to inappropriate overstate future earnings.
- “Cookie jar reserves” where companies over-accrue charges for such items as sales returns, loan losses or warranty costs in good times and use those reserves to smooth future earnings in bad times.

- Premature revenue recognition, before a sale is complete, before a product is delivered to a customer, or at a time when the customer still has options to terminate, void or delay the sale.
- Improper deferral of expenses to improve reported results and misuse of the concept of materiality to mask inappropriate accounting treatment.

The practices described above can misrepresent a company's true financial condition and results of operations. Accounting practices become biased, where earnings reports reflect the desires of management rather than the underlying financial performance of the company.

The governance structure of a firm is affected by different legal, financial, and cultural factors that can cause it to vary from other firms' structures. Internationally, each governance system develops under different circumstances, creating differences in the focus of the respective governance systems and the measure of their effectiveness (Rubach and Sebor, 1998).

There is an extensive body of positive accounting literature that examines corporate governance issues and earnings management (e.g., *Auditing: A Journal of Practice and Theory*, *The Accounting Review*, *Journal of Accounting and Economics*). Corporate governance processes are formed to maintain the credibility of firms' financial reports and protection against earnings manipulation. Dechow et al. (1996) investigate the relation between earnings manipulations and corporate governance structure. They find that firms which manipulate reported earnings are more likely to have weak governance structure and find that those firms are less likely to have audit committees and less likely to have a Big Six auditor. Drawing from the theory that outside or non-executive directors have incentives to exercise their monitoring tasks to flag to the

market that they are decision experts and understand the importance of decision control (see Fama and Jensen, 1983), Beasley (1996) finds that no-fraud firms have significantly higher percentages of outside directors than firms with earnings management (financial statement fraud). Therefore, the composition of the board of directors appears to be important for reducing the likelihood of earnings manipulation (i.e., financial statement fraud or its detection).

Peasnell et al. (1998) examine further the board effectiveness in constraining earnings management, after controlling for managerial ownership (i.e., the proportion of board equity ownership) and discretionary accruals variables. They find that income-increasing discretionary accruals are negatively related to the percentage of outside board members. Their results are consistent with the boards' legal responsibility in the UK, where the board of directors is legally responsible for the preparation and presentation of financial reports since the presence of outside directors is negatively associated with aggressive income reporting.

Audit committees are viewed as monitoring mechanisms that increase the audit attestation function of external financial reporting. This committee has several functions, such as to increase the credibility of annual audited financial statements, to assist directors in meeting their responsibilities and to enhance audit independence (Bradbury, 1990). Bradbury (1990) finds that audit committees of New Zealand firms might be an efficient mechanism for reviewing the audited financial statements and accounting controls as the size of board of directors increases. His study focuses on the influence of boards of directors on formation of audit committees.

Anderson et al. (1993) investigate monitoring mechanisms used for corporate governance in association with firms' production-investment attributes (i.e., assets-in-place versus growth options). They argue that external auditing is a function of a firm's mix of assets-in-place and growth options. Their results support the prediction that the role of external auditing increases relative to directors' monitoring when the proportion of firm value explained by assets-in-place increases.

However, there appears to be little research concerning corporate governance in the frequency or the nature of income smoothing behaviour. Specifically, the presence of audit committees and auditor quality can be associated with income smoothing. It appears that there is no study that focuses on the presence of audit committees or on auditor quality in association with income smoothing.

### ***2.3 Reasons for Income Smoothing***

Reasons for earnings management are varied. Early studies hypothesise that improving shareholders' welfare is the basic motive for management to smooth income because a stable stream of income sustains a higher level of dividend (Gordon, 1964). Income smoothing conforms with the objective of reducing uncertainty of expected net cash flows, therefore resulting in a lower risk premium in the pricing of capital assets (Ronen and Sadan, 1975). Beidleman (1973) concludes that income smoothing also reduces the correlation between a firm's expected returns and the return of the market portfolio. This occurs because earnings variability is interpreted as a risk for the firm and has a direct effect on investor's capitalisation rates and an adverse effect on the value of a firm's shares. Accordingly, firms smooth income to create an impression of

reduced risk in the eyes of the financial markets. According to Ronen and Sadan (1981), this can bring about a consequently lower cost of capital, and in turn, a higher market valuation. Assuming a positive risk-return relation, Trueman and Titman (1988) assume that managers act in the interest of shareholders, and that shareholders (and capital markets in general) prefer assets delivering smooth returns. Trueman and Titman (1988) provide a theory that a manager may rationally seek to smooth reported income, to lower claim holders' perceptions of the variance of the firm's underlying economic earning. In turn, they show that such action could have a positive effect on the firm's market value.

Later studies consider that income smoothing practices mainly arise as a consequence of agency problems. Management might smooth income if the firm's compensation scheme is related to the steady growth of income. Ronen and Sadan (1981) have demonstrated that bonus schemes based on reported earnings can spur smoothing behaviour.

Lambert (1984) explains that income smoothing can allow financially constrained managers with earnings-based management compensation to smooth their own income. In his two-period model, at the beginning of the first period, the principal offers the agent a contract, which specifies how the agent will be compensated in period one and period two. Accordingly, the agent's effort in the second period is dependent on the function of his production in the first period. This condition creates incentives for the agents to manipulate their effort over time as a function of their past performance. If the agents have high performance in the first period, they decrease their effort to

balance the low production that is likely to occur in the second period. However, if performance is low in the first period (implying low compensation), the agents increase their effort.

Healy (1985) hypothesises that income smoothing is motivated by bonus contracts that pay managers a fixed salary in each period, plus an additional monetary bonus that is only awarded if a predetermined target level of profits is achieved. These capped incentives would lead managers to transfer from periods in which they are far above the level that triggers the bonus, to periods in which they are below such a target<sup>4</sup>. His argument is developed by Holthausen et al. (1995) to show that as earnings before discretionary accruals increase above managers' prespecified targeted performance goals, managers have incentives to take income decreasing discretionary accruals; and as earnings before discretionary accruals decrease below a managers' prespecified targeted performance, managers have incentives to take income increasing discretionary accruals up to but not exceeding targeted performance, as long as they are above the lower bound of their contract.

Holthausen et al. (1995) argue that performance goals are increased in years in which firm performance exceeds targeted performance, but are not decreased when firms performance is less than targeted performance. Thus, managers smooth performance to influence the financial performance goal established for the target payout.

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<sup>4</sup> However, when profits are below the threshold, managers “take a bath” in the current period and keep potential earnings for a future period.

Meanwhile, Fudenberg and Tirole (1995) have proposed an explanation of income smoothing based on incumbent managers' rents (e.g., private benefits of control), owners' inability to commit to long-term contracts, and information decay<sup>5</sup>. This implies that the fear of losing future rents by being replaced during a low-profits punishment phase stimulates managers to shift income. In other words, in equilibrium, managers smooth reported profits because given information decay, some periods of low profits may lead shareholders to replace the manager even if profits have been high in the past.

Moses (1987) argues that smoothing via accounting policy changes is positively associated with the degree to which current earnings (before the accounting change) diverge from expectations. His argument is that smoothing provides signals that allow for more accurate forecasts, and that within the signalling framework, management is assumed to be penalised to the degree that realisations differ from user expectations. Therefore, incentives to smooth should increase as the divergence between actual earnings and expectations increases.

By using US data, Moses (1987) concludes that bonus plans may provide incentives to avoid fluctuations in earnings. He also finds that political costs (as proxied by firm size and market share) are associated with smoothing. The strong relationship between smoothing and pre-change earnings deviations suggests that attempts to smooth

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<sup>5</sup> In evaluating management's performance, a good current performance will not compensate for poor future performance. Therefore, when future performance is expected to be poor, managers have an incentive to smooth reported earnings by decreasing current earnings for the benefit of future earnings in order to avoid dismissal.



earnings are triggered by earnings realisations that differ greatly from expectations. The inverse relation between smoothing and the directional impact of accounting changes on the level of reported earnings suggests that management may make trade-offs between the risk and return aspects of the firm's earnings numbers when adopting accounting changes. However, when Saudagaran and Sepe (1996) replicate Moses' (1987) income smoothing tests with Canadian and UK data, they find results that are different from those of Moses (1987). In particular, they find no association between smoothing and firm size. They conclude that in countries outside the US, it might not be appropriate to proxy political costs with a size variable. The Saudagaran and Sepe (1996) finding in relation to firm size is consistent with the Godfrey and Jones (1999) finding of no significant association between income smoothing and firm size in an Australian context. In combination, Moses (1987), Saudagaran and Sepe (1996), and Godfrey and Jones (1999) indicate that international differences may significantly affect managers' incentives to smooth income.

Ashari et al. (1994) studied income smoothing in association with nationality using Singaporean and Malaysian companies to examine the relative incidence of smoothing in each country. Although the general accounting principles (GAAP) in Singapore and Malaysia are almost identical, they found that companies across different nationalities have different income smoothing indices. Ashari et al. (1994) concluded that differences in the financial reporting and regulatory framework are important influences on income smoothing behaviour. In particular, the Singapore regulatory environment is more stringent than the Malaysian environment. In Singapore, a government-established Commercial Affairs Department has a role in monitoring

financial reports of companies. In addition, Singapore is more developed than Malaysia as a financial and business centre. Those conditions place Singaporean companies under more scrutiny. The more stringent the environment, the more difficult it is for companies to exercise income smoothing.

More recently, Langendijk and Van Praag (1996) identify four variables of institutional differences. The first is a legal system that influences the incentive to smooth income in Germany, the Netherlands and the UK. In Germany, where the law is highly codified and prescriptive, managers of listed firms are more likely to manage earnings, compared with the other two countries. According to the law, management is prohibited from retaining more than half of the net income for the year, leaving disposition of the unappropriated profit and certain retained earnings to the discretion of shareholders at the annual meeting. This creates incentives for managers to manage reported earnings in order to attain a desired dividend because higher reported earnings may create shareholder pressure for higher dividends. Second is the tax system. Accounting practices in the Netherlands and UK reflect a much less rigid approach to financial accounting because accounting profit is not the same as taxable income. In contrast, in Germany, the tax laws determine accounting practice by requiring companies to book revenues and expenses in order to claim them for tax purposes.

Langendijk and Van Praag (1996) also contend that German companies are more conservative in using an income smoothing strategy, in contrast with UK and Netherlands companies that are more inclined to use earnings maximising strategies. They argue that the difference arises because UK and Netherlands companies report

their earnings based upon unbiased estimates of future earnings and firm's future cash-generating capacity. In contrast, German companies rely heavily on debt financing by a relatively small number of banks. As a consequence, they focus on maintenance of sufficient resources to pay debt. The fourth reason for differences between Germany and the other two countries is the differences in accounting regulations. Managers of German companies are more likely to smooth because discretionary provisions are permitted, while in the UK and the Netherlands purely discretionary provisions are not allowed.

#### ***2.4 Corporate Governance: Institutional differences***

In this study, corporate governance issues, auditor quality and the presence of an audit committee, are employed to investigate how Australian firms smooth earnings. US corporate governance practices are considered to provide a comparison. The comparison is investigated because corporate governance practices are influenced by management, government regulations, accounting profession, stock exchanges, and users of financial statements, that may be different in each country (Gray et al., 1984). Contrasting the US and Australian practices is useful since Australia and the US are arguably similar in many of their business approaches, but have some significantly different regulated auditing requirements.

Corporate governance is clearly defined in Corporate Practices and Conduct produced by the Working Group chaired by Henry Bosch. "Corporate governance is the system by which companies are controlled. Shareholders have delegated many of their responsibilities as owners to the directors who oversee the management of the business

on their behalf. Directors are accountable to their shareholders and shareholder participation is necessary to make that accountability effective".

In the US, listing rules require certain particular governance practices, such as the appointment of an audit committee, but there is no requirement to disclose governance practices. In contrast, on 1 July 1995, the Australian Stock Exchange (ASX) introduced listing rule 3c(3)(j), which requires listed companies to set out their main corporate governance practices in their annual report. The rule requires disclosure of:

A statement of the main corporate governance practices that the company has had in place during the reporting period. When the statement identifies a corporate governance practice that has been in place for only part of the reporting period, the part of the period for which it has been in place must be disclosed.

However, corporate governance issues are very broad because companies vary so much in size, complexity, and ownership structure. The mechanisms adopted involve the division of responsibilities, the composition of the board of directors, the role of institutional investors, the role of an audit committee, and the role of external auditors. This thesis focuses on two aspects only, the quality of external auditing and the presence of an audit committee.

The use of audit committees and top tier external auditing can be considered to provide important and credible signals of high quality monitoring by boards of directors. The formation of an audit committee provides an avenue of communication between the board of directors and management in relation to the oversight function. The existence of an audit committee can reduce the information asymmetries between management and the board, since auditing stems from a demand to monitor and arbitrate on the

application of accounting methods, including detecting fraud and irregularities. The value of the auditor depends on the auditor's independence of management to report any detected fraud and irregularities of contracting parties (Watts and Zimmerman, 1986). In Australia the Corporations Law (1990) obliges external auditors engaged by public companies to be registered, and establishes a minimum level of quality which the external auditor must provide. Nonetheless, differences in audit quality are generally perceived to be associated with auditors' designations as Big 5 auditors (or, previously Big 8 or Big 6 auditors).

In the US, the inclusion of audit committees in the structure of corporate governance should be understood as part of the reaction to perceived corporate abuses occurring over the last three decades. Alleged fraudulent financial reporting, defalcations, and accounting method choice abuses serve as evidence that management was not effectively accountable to the full board of directors. The audit committee was an effort to specifically designate responsibility for accounting-related matters, to provide a reporting structure for insiders that would circumvent managerial retribution, and to supervise relations with the external auditor. CICA (1981) chose to define an audit committee as "a committee of directors of corporations whose specific responsibility is to review the annual financial statements before submission to the board of directors. The committee generally acts as liaison between the auditor and the board of directors and its activities may include the review of nomination of the auditors, overall scope of the audit, (and) results of the audit..."

The SEC has forced a number of corporations to adopt audit committees as a remedial measure. Although many large companies had voluntarily formed audit committees by the mid-1970s, a key event occurred when audit committees were mandated for New York Stock Exchange firms in 1978, and for those listed on the National Market System (NASDAQ) by the National Association of Security Dealers in 1989 (see Vanasco, 1994).

Unlike the US situation, the Australian Stock Exchange (ASX) is concerned that such a requirement will burden many listed companies. Although there have been suggestions from a number of Parliamentary Committees that audit committees should be made mandatory for all listed companies<sup>6</sup>, the ASX has determined not to make audit committees mandatory. The ASX requires listed companies to state in their annual reports whether they have an audit committee, and if not, they should provide a disclosure explaining why they do not have one<sup>7</sup>. There has been no statutory legislation requiring the formation of audit committees and the ASX has no requirements for forming of audit committees. The primary spur for establishing of audit committees has come from unexpected company failures. It seems that the development audit committees in Australia are part of an emphasis on promoting the best practice of corporate governance in the business community<sup>8</sup>. It is the result of self-regulation rather than government regulation. Other reasons that oppose a

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<sup>6</sup> The Report of the Senate Standing Committee on Legal and Constitutional Affairs on Company Directors' Duties in November 1989 and on Corporate Practices and the Rights of Shareholders in November 1991 (see ASX, 1994)

<sup>7</sup> ASX Discussion Paper: Disclosure of Corporate Governance Practices by Listed Companies, September 1994, at para 47.

<sup>8</sup> It has similar emphasis that the development of audit committees in UK focuses on promoting the best practice of corporate governance in the business community.

mandatory requirement are that it would place a great burden on small companies and it may give the impression that audit committees constitute a supervisory tier within boards of directors. In addition, the history of audit committee development indicates that these committees have been formed as a result of public and political concern about corporate failures and corporate misconduct. Therefore, although audit committees are not required by legislation or regulation, they have been constituted mainly as a consequence of the regulatory environment (see Porter and Gendall, 1993).

Furthermore, the opposition to legal requirements for audit committee formation maintains that it is not only due to the costs entailed, but also to the assumption that members of boards of directors know better than government how to determine the usefulness of audit committees in different situations (CICA, 1981).

Nonetheless, a survey by Ernst & Young in July 1990 revealed that audit committees are becoming popular in Australia, particularly among companies listed on the Australian Stock Exchange; and there has been a significant increase in the number of listed companies with audit committees. Only 27% of listed companies had an audit committee, according to a survey in 1982 by Davidson (The Chartered Accountant July 1984), compared with 66% in Ernst & Young's survey (1990). Meanwhile, the findings of Arthur Andersen (1992) provide evidence of the benefits of a publicly listed company having an audit committee, such as:

- Companies with audit committees take a more active role in assessing the risk of fraudulent or otherwise misleading financial reporting.

- Companies with audit committees are more active in raising accounting and regulatory issues with both management and external auditors.
- Companies with audit committees use the committee to focus on regulatory requirements and internal controls.

In regards to external auditing, in the US, as in Australia, auditors' duties in relation to fraud have continued in recent years. However, unlike Australia, the main US trend has affected auditors' duty to detect, rather than to report, fraud. Under SAS No.1 (AICPA 1972), auditors were required to identify when fraud might affect their opinion on the financial statements and to consider this possibility when conducting the audit. SAS No.16 (AICPA 1977) imposed on auditors a duty, within the limitations of the audit process, to search for fraud, that would have a material effect on the financial statements and to plan and perform their audit. SAS No.53 (AICPA 1988) further requires auditors not only to find irregularities, but also to exercise due care in planning, performing and evaluating the results of audit procedures and a proper degree of "professional scepticism".

In Australia, the auditor's responsibility to detect and report fraud and irregularities is promulgated in Statement of Auditing Practice AUP 16, "Fraud and Error", which was effective from June 1983. In March 1993 the Auditing Standard Board (AuSB) revised AUP 16 "The Auditor's Responsibility for Detecting and Reporting Irregularities including Fraud, Other Illegal Acts and Error". It emphasises that the auditor's role is not to prevent irregularities; rather it is to exercise skill and care so as to have a reasonable expectation of detecting material mis-statements arising from irregularities.



In July 1996, Statement of Auditing Practice AUP 16 was superseded by Auditing Standards 210, "Irregularities, Including Fraud, Other Illegal Acts and Errors". This new standard has the same emphasis as the previous standard. It states that

The responsibility for the prevention and detection of irregularities rests with management. Through the implementation and continued operation of adequate internal control structure, management aims to derive reasonable assurance that irregularities are prevented as far as is possible, and detected if they occur... (para 9).

The auditor is not legally or professionally responsible for preventing irregularities. However, the auditor has a legal and professional duty to exercise reasonable skill and care in the planning and conduct so as to have a reasonable expectation of detecting material misstatements arising as a result of irregularities... (para 10).

In addition, unlike auditors in Australia, auditors in the US are not (yet) required (or permitted) to report to third parties fraud (or suspected fraud) uncovered during an audit, except in restricted and carefully defined circumstances (AICPA 1988 para 29).

In Australia, although the statute requires auditors to report fraud to the relevant government body, in practice, they are likely to avoid that provision. Prior to 1989, the Companies Act and Codes ss285(10) requires auditors to report to the National Companies and Securities Commission (NCSC), when during an audit period of a company, they (auditors) find that "(1) there has been a contravention of, or failure to comply with, a provision of the Code; and (2) in their opinion, the matter will not be dealt with adequately by comment in the audit report or by referring it to the company's directors." The Commission states that the auditors are not obligated to be satisfied beyond reasonable doubt that a contravention of the Code has occurred. It states that

[The auditor] need not conduct exhaustive and conclusive investigations nor rely exclusively on evidence which would be admissible in criminal proceedings. However, the auditor is required to assemble and assess all relevant facts in order to reach a considered opinion as to whether, on balance, a contravention is likely to have occurred.

Furthermore, referring to the second condition, the NCSC provides direction for auditors to make their decision, for example:

- The failure to comply with approved accounting standards or failure to keep proper accounting records can be dealt with by comment in the audit report (para 6).
- Where a member of staff (other than a director) obstructs the auditor, or the company fails to lodge an annual return, the matter may be remedied effectively by referring it to directors (para 7).
- Serious offences such as fraud, breach of directors' duty of care and breach of other fiduciary duties are unlikely to be dealt with adequately otherwise than by reporting the matter to the NCSC (para 8).

Since 1989, auditors have had to report to the Australian Securities Commission (ASC) under the Corporations Law sections 332. The auditor has the right to attend the general meetings and must inform the Commission of breaches by the company/directors of the Corporations Law. In July 1998, ASC changed its name to the Australian Securities and Investments Commission (ASIC), which has additional responsibilities for consumer protection in the financial system.

However, it appears auditors have not used the provisions widely (Godsell, 1990). Godsell (1990) lists some possible causes. Firstly, auditors are reluctant to make disclosures of highly confidential information, which is likely to embarrass their relationship with the client's directors. Secondly, auditors are concerned about difficulties and uncertainties in interpreting the legislation. Finally, auditors are likely to be concerned about the extent of defamation proceedings in making disclosures.

## ***2.5 Conclusion***

In summary, incentives for managers to smooth income may differ. Managers can smooth income to achieve a stable income that sustains a higher level of dividend for shareholders, to generate an impression of reduced risk to the financial market, and to avoid dismissal during low profit periods. The presence of an audit committee or of a high quality external auditor is expected to enhance monitoring function of the board and, in turn, to reduce managers' opportunity to smooth earnings. However, the incentives for managers to smooth are also influenced by different regulatory environments. For example, different approaches to form an audit committee and to detect fraud by auditors can also affect managers' incentives to smooth earnings. This leads to the question of whether managers of Australian firms smooth earnings more frequently than managers of firms facing different regulatory requirements, as in the US.

## **Chapter 3: Hypotheses Development**

### ***3.1 Introduction***

In this chapter, two variables are employed to explain smoothing behaviour, namely, the presence of an audit committee and the quality of the reporting firm's external auditor. Audit committees and external auditors have become a major means for companies to monitor the reliability of the financial statement process. Existing research investigates whether potential for high agency costs is associated with demand for audit committees (see Knapp, 1987; Bradbury, 1990) and high quality external auditors (Chow, 1982; Francis et al., 1999). To investigate their effectiveness, agency theory is used to explain the associations between earnings management, particularly via income smoothing and (a) the presence of audit committees and (b) top tier external auditors. The rest of this chapter develops the hypotheses.

### ***3.2 Agency Theory***

The separation of management from ownership in the modern corporation provides an ideal context for the operation of agency theory. Shareholders (and debtholders in the context of debt agency contracts) are principals with interests in deriving maximum utility from the actions of management, serving as their agent. Agency costs arise because of the separation of ownership and management and the resulting inability of the owners to observe the actions of management who have incentives to act in their own interest rather than the principals' (Jensen and Meckling, 1976). In an efficient labour market, principals price-protect ex ante and settle-up, ex-post, for agency costs (Fama, 1980). Hence, agents have incentives to invest in various information systems

and control devices to reduce agency costs associated with information asymmetry. Methods include auditing, formal control systems, budget restrictions, and the establishment of incentive compensation systems (Fama and Jensen, 1976). These control devices can offer Pareto optimality (i.e., maximum gains for all parties) since the agent would otherwise bear agency costs that occur when principals discount the value of the firm, based on the likelihood of adverse selection, shirking, and moral hazard (Alchian and Demsetz, 1972; Jensen and Meckling, 1976).

Agency costs of equity occur when managers have opportunities to enlarge their own wealth at the expense of the shareholders' wealth. This causes shareholders to price protect against such wealth transfers. The costs of price protection are borne by the managers. The greater the potential agency costs of equity, the greater the likely price protection and the greater the net benefit to managers of bonding activities, such as expenditures to ensure that agents will restrict their activities in accordance with contractual terms, and submitting to inspection and reports on matters related to contract compliance activities.

In similar fashion, agency costs of debt arise from the debtholder-manager relationship. In this relationship, managers are deemed to act on behalf of shareholders while being the agents of lenders. The debtholders protect themselves in the original debt issue price against the prospect that managers will behave in a manner contrary to lenders' interest. When agency cost of debt increases, managers face increasing incentives for bonding to reduce the costs of price protection activities. To prevent wealth transfers from debtholders, tight covenants can be written into debt contracts. A demand for

monitoring therefore increases to ensure that the agents do not breach covenants (see Smith and Warner, 1979, for extensive discussion of the agency costs of debt).

Management may use various means to indicate to others the quality of the information they are providing. Bonding activities can involve submitting to higher quality auditing or audit constraints than are otherwise required, for example. Demands for high quality monitoring may result in the engagement of top tier external auditors for external auditing purposes<sup>9</sup> (see Chow, 1982; Anderson et al., 1993) and the use of audit committees (see Pincus et al., 1989; Bradbury, 1990). The use of audit committees and top tier external auditors can be considered an important part of the decision control system for monitoring by boards of directors (see Fama and Jensen, 1983). Fama and Jensen state:

Internal control in the open corporation is delegated by residual claimants to a board of directors. Residual claimants generally retain approval rights (by vote) on such matters as board membership, auditor choice , mergers, and new stock issues. Other management and control functions are delegated by the residual claimants to the board (p.313).

In sum, agency theory places economic self-interest at the centre of theoretical expectations. Certain contractual relationships, combined with information asymmetry, indicate a corresponding demand for investment in control and monitoring mechanisms<sup>10</sup> to (a) prevent or detect behaviour not corresponding with principals' interests; and (b) signal an alignment of principal and agent interests.

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<sup>9</sup> In this study, the term "top tier auditing firms" is used to refer to Big Eight, Six, and Five auditing firms, depending upon the temporal setting.

<sup>10</sup> To a large extent, this study focuses on opportunistic behaviour (e.g., shirking and perquisite taking) of managers. Such behaviour cannot be entirely eliminated in the presence of positive information costs (see Ball, 1989).

### ***3.3 The Audit Committee***

An audit committee is defined as a subcommittee of board of directors that helps the board of directors to monitor and oversee management. The role of this committee is to review the annual financial statements before submission to the board of directors, to review the financial statements, the effectiveness of the company's accounting and internal control systems and the findings of the auditors (see Marrian, 1988). The effectiveness of audit committees should be influenced by the factors believed to influence agency costs (Kalber and Fogarty, 1998). For example, audit committees can be viewed as oversight mechanisms which will be employed in high agency cost situations to improve the quality of the information flow between principals and agents (see Watts and Zimmerman, 1986). Appointment of a top tier auditor serves a similar function.

Pincus et al. (1989) use agency theory to discuss reasons for the voluntary formation of audit committees. They find that there are six characteristics that are associated with voluntary audit committee formation: lower percentage of managerial ownership, higher leverage, larger firm size, a greater proportion of outside directors to total directors, appointment of Big Eight (now Big Five) auditors; and participation in the national market system. Their results are supported by later studies (e.g., Collier, 1993). Collier (1993) argues that audit committees can reduce agency costs because audit committees ensure audit quality and improve the effectiveness of monitoring. He suggests that the incentives to form audit committees increase with increasing numbers of shareholders. Collier (1993) also contends that another motivation to form audit committees is related to agency costs of debt. Increasing debt and increasing agency

costs of debt lead managers to improve monitoring in order to reduce the costs of price protection from debtholders.

In relation to earnings management, Collier (1993) finds that audit committees are efficient in reducing information asymmetries between non-executive directors and executive directors. Non-executive directors can mitigate earnings management because they can help to control agency problems between managers and shareholders. Since non-executive directors represent shareholders' interests, the likelihood of decisions contrary to shareholders' interests should decrease with the fraction of non-executive directors on the board (Brickley et al., 1994).

Defond and Jiambalvo (1991) find that firms with accounting errors are less likely to have audit committees. They argue that the audit committee is an important element of a firm's internal control environment, and can reduce the likelihood of overstatement errors. Defond and Jiambalvo (1991) find that overstatement errors are the result of managers responding to economic incentives. Since overstatement errors are part of managing reported earnings, it is possible that the existence of audit committees leads to reduced earnings manipulation including income smoothing.

McMullen (1996) finds that audit committees can be associated with reduced incidence of errors, irregularities and some indicators of unreliable financial reporting. Shareholders' litigation alleging management fraud, quarterly earnings restatements and illegal acts are variables used to measure errors and irregularities. SEC actions and auditor turnover involving an accounting disagreement are used to measure other



indicators of unreliable financial reporting. McMullen's evidence indicates that when audit committees are in place, there is less incidence of intentional or unintentional inappropriate accounting measurements, less incidence of intentional or unintentional inadequate accounting disclosure, and less incidence of management fraud and illegal acts. She contends that firms with reliable financial reporting are more likely to have audit committees. When this is the case, it can be assumed that the existence of audit committees can lessen the propensity to manipulate earnings.

The 1992 Arthur Andersen Survey of Audit Committees reported that despite the absence of regulatory requirements, 48% of Australian firms had established an audit committee. The Arthur Andersen Survey provides considerable evidence that those companies with audit committees had stronger corporate governance mechanisms in place. In general, the survey found that managers of companies with audit committees were more frequently involved in evaluating the possibility of fraudulent or other misleading financial reporting<sup>11</sup>.

To sum up, research indicates that audit committees can mitigate management's opportunistic behaviour in transferring wealth from shareholders/lenders. Therefore, it can be predicted that firms with audit committees are less likely to manipulate earnings than firms without audit committees. Income smoothing is a form of earnings management. Hence, it is hypothesised that:

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<sup>11</sup> In an Australian context, Baxter and Pragasam (1999) argue that it is difficult for users to assess the performance and effectiveness of an audit committee from annual reports since ASX listing rules only require disclosure of whether companies have audit committees. They do not require disclosure of additional information such as the audit committee's composition, rights, functions and numbers of yearly meetings.

**H1: Firms with audit committees are less likely to smooth earnings than firms without audit committees.**

### ***3.4 External auditing***

Several auditing guidelines relating to auditors' duties to detect and report fraud have been promulgated by professional accounting bodies world-wide. In general, those auditing standards require auditors to detect fraud. Auditors should plan and perform their audits so as to have a reasonable expectation of detecting fraud or material misstatements resulting from fraud.

A survey of auditors reveals that there are several signs that auditors should be aware of in attempting to detect fraud. Auditors cannot simply rely on complying with auditing standards in their work because these official standards do not identify practices that suggest the presence of fraud in financial reporting. The auditor must look for other conditions or environments that are conducive to fraud. These signs include aggressive reporting positions (Heiman-Hoffman et al., 1996).

Auditing mitigates information asymmetries that exist between management and shareholders by allowing outsiders to verify the validity of financial statements. Firms are subject to agency costs because of those information asymmetries. As such, it may be efficient for contracts to reduce such information asymmetries by constraining management's ability to manage earnings. Since accounting information is an outcome of a management process in a firm, auditing is derived from a necessity to monitor and arbitrate on the application of accounting methods. Boards of directors need auditing

because they have the function to oversee management actions, to provide advice and to vote on behalf of the stockholders<sup>12</sup> (Anderson et al., 1993).

High quality auditors derive their reputation from being, or being perceived to be, independent from management in reporting any detected irregularities and fraud (Watts and Zimmerman, 1986). In line with this view of auditing quality, Thoman (1996) argues that auditors can reduce their legal exposure by reporting more conservatively on audited financial statements. Top tier auditors charge a premium for their services, consistent with the arguments that (a) they require compensation for the costs invested in acquiring their skills and reputation; and (b) that firms are prepared to pay a premium for high quality monitoring of accounts (Craswell et al., 1995). Thoman (1996) suggests that since auditors are more conservative, they cannot tolerate earnings management, whether it be income increasing or income smoothing in its effect.

Big Six (currently Big 5 and previously Big 8) accounting firm designation is often used to proxy audit quality. Palmrose (1988) suggests that the big accounting firms (the Big Six) are less frequently sued than other audit firms because they provide higher quality audits. Audit quality is defined as the probability that financial statements contain no material omissions or mis-statements. Litigation against auditors generally involves a process that starts from earliest detection of potentially false or misleading financial statements, to filing of lawsuits. That process comes as a consequence of audit failures.

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<sup>12</sup> Auditing is also derived from a demand by management for a mechanism to protect and to enhance its reputation because they want to ensure that the process production is consistent with management intentions and to reduce employees' frauds.

The litigation is costly because auditors must pay litigation costs and face other costs such as sanctions from professional associations and regulators (e.g., ASC). Most importantly, those costs can result in loss of reputation and future audit fees. Hence, auditors have incentives to enhance their audit quality and also to reduce the risk of reputation damage by issuing conservative opinions, for example. Therefore, Palmrose (1988) concludes that high quality auditors that have a reputation for detecting and correcting/revealing material omissions or mis-statements, have greater incentives to minimise audit failures to maintain their reputation.

DeAngelo (1981) proposes that external parties use audit firm size as a surrogate for audit quality. The probability of discovering a "breach" in the client's accounting system partially depends on the auditor's technological capabilities, which are likely to be better for a Big Six firm<sup>13</sup>. Drawing on Watts and Zimmerman (1981), DeAngelo (1981) defines audit quality as the joint probability of detecting and reporting material financial statement errors, which will depend partially on the auditor's independence. Implicitly included in this definition is the auditor's ability to reduce earnings manipulation (Becker et al., 1998). Becker et al. (1998) maintain that higher quality audit firms have skilled professionals who can develop more effective tests for detecting errors. Also, due to their greater independence and higher level of professional scepticism, higher quality auditors are less willing to accept questionable

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<sup>13</sup> However, the probability of *reporting* a breach depends on an auditor's independence. Drawing on DeAngelo (1981), *client-specific quasi-rents* are expected to lower auditor independence because of the incentive "to cheat" to retain the client. However, the quasi-rents specific to other clients of a given auditor provide a disincentive "to cheat." These other quasi-rents act as a collateral bond against opportunistic behaviour because the auditor risks losing these other quasi-rents due to lower perceived audit quality. Since larger firms have a larger collateral bond, *ceteris paribus*, the larger the auditor the lower the incentive to cheat (Becker et al., 1998)

accounting methods, are less willing to accept changes in accounting estimates without reasonable support, and are more likely to report errors and irregularities. Since high quality auditors are proxied by Big Six auditor designation, Becker et al. (1998) conclude that non-Big Six auditors allow more income increasing earnings management, via discretionary accruals, than Big Six auditors.

Specifically, Becker et al. (1995) argue that managers of firms with large changes in earnings before discretionary accruals choose discretionary accruals that smooth income<sup>14</sup>. They find that firms with non-Big Six auditors reported significantly greater earnings manipulation in response to income smoothing incentives compared to firms with Big Six auditors.

In summary, agency theory and empirical research indicate that there is a negative association between the quality of auditors and earnings manipulation and it is hypothesised that:

**H2: Firms with Top Tier Auditors are less likely to smooth earnings than firms without Top Tier Auditors.**

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<sup>14</sup> In their working paper, Becker et al. (1995) define income smoothing by looking at the ratio of non-discretionary earnings minus total earnings in the prior year and whether the ratio was in the top or bottom ten percent of such ratio in its industry. They argue that firms have incentives to smooth earnings downward when the ratio is in the top ten percent of the industry ratio. On the other hand, firms have incentives to smooth earnings upward when the ratio is in the bottom ten percent of industry ratio. They used those criteria to detect the use of discretionary accruals for reducing the variance of reported earnings.

### ***3.5 Relationship between Audit Committees and External Auditing***

In their 1992 survey, Arthur Andersen found that companies with audit committees had effective and productive relationships with external auditors. In general, the audit committee met with external auditors to discuss the findings of the audit prior to the board of directors signing the annual accounts. In contrast, in firms without audit committees, the board met with external auditors less frequently. Furthermore, firms with audit committees were more likely to have a program to ensure a meaningful response by management to the external auditors' management letter (i.e., 92%), compared to companies without audit committees (i.e., 58%). One benefit of audit committees is to enhance communication between the external auditors and the board. That communication is pivotal. Ernst and Young's (1990) survey reports some issues that should be included: fraudulent or illegal acts, significant judgements and accounting estimates made by management, and areas of disagreement with management.

The ability and motivation of audit committees to serve as active and objective intermediaries in audit conflicts has been questioned because audit committees often fail to reduce management pressure on auditors when disputes arise during an audit (Knapp, 1987). Knapp (1987) investigates factors such as background of audit committee members, size of the audit firms, nature of conflict issues and the auditee's financial condition. He finds that when the issue of a dispute is the subject of objective technical standards (i.e., accounting and auditing matters), audit committee members tend to support auditors rather than management. This is especially the case, where the firm has a top tier auditor, or where the firm is in a weak financial position. Knapp

(1987) argues that there are several motivations for this finding. Firstly, audit committees are more likely to be hesitant to engage actively and objectively in the corporate oversight role because they do not have expertise to evaluate technical issues. As such, they are more likely to agree with auditors. Secondly, audit committees generally support top tier auditors more than non top tier auditors since top tier auditors have capability to absorb a greater portion of potential litigation losses than non top tier auditors. As a consequence, audit committee members can constrain their potential litigation losses to a greater degree when the auditor is a top tier auditor. Finally, firms in weak financial positions provide increased legal exposure of directors. This creates incentives for audit committee members to support the auditor in an audit conflict and it shows audit committee members have fulfilled their fiduciary responsibility.

Income-increasing procedures are likely to be issues that create disagreement between management and auditors (see DeFond and Jiambalvo, 1993). DeFond and Jiambalvo (1993) find that firms in which there is a disagreement are more likely to violate debt covenants, have higher leverage, experience a decline in earnings and have big eight auditors than firms with no such disagreement. However, no study to date has examined the incidence of auditor/management conflict in relation to income smoothing.

In summary, effective interaction between audit committee members and auditors can enhance the oversight of management. Audit committee members tend to support auditors when disagreement between auditors and management occurs in aggressive earnings management. To the extent that income smoothing is a form of earnings

management that distorts the reported financial performance of and position of the firm, a similar response is likely if management smooth reported earnings. Based on the discussion above, it can be hypothesised that:

**H3: Firms with both audit committees and top tier auditors are less likely to smooth earnings than firms without both audit committees and top tier auditors.**

### ***3.6 Corporate Governance: Audit committee and auditing regulations***

Audit committees are compulsory for listed companies in the US but not in Australia. The New York Stock Exchange (NYSE) requires that domestic companies should have an audit committee comprising only directors independent of management and free from any relationship that would conflict with the exercise of independent judgement as committee members. However, the NYSE does not have a disclosure-based rule for corporate governance practices. In contrast, the Australian Stock Exchange (ASX) requires listed companies to state in their six monthly announcements whether a formally constituted audit committee is established. Therefore, listed companies should report in their annual reports whether they have an audit committee and, if they do not, provide a statement explaining why. This indicates that the regulatory body in the US is stricter than in Australia in regards to requirements to form audit committees, even though Australian firms are strongly encouraged to have them.

Internationally, the development of auditors' duties in relation to fraud have been affected by criticisms that many litigation cases are due to audit failure to detect fraud. In 1974, the AICPA established the Commission on Auditors' Responsibilities (the



Cohen Commission) to investigate auditors' responsibility to detect fraud. The commission recommended that "an audit should be designed to provide reasonable assurance that financial statements are not affected by material fraud". In 1986 the National Commission on Fraudulent Financial Reporting (the Treadway Commission) was established in the US. The commission stated that auditors must play their full role in detecting fraud. They recommended that auditing standards be changed to require auditors to take affirmative steps to assess the potential for fraudulent financial reporting and to design tests to provide reasonable assurance of detection. Porter (1994) conjectures that criticism of auditors involves auditors' role in detecting and reporting illegal acts and other audit expectation-performance gap issues<sup>15</sup>. In Australia though, Porter presumes that the auditor regulatory body has reluctantly acknowledged the duties imposed on auditors by statute and does not encourage auditors to go beyond the minimum legal requirements, hence, the somewhat defensive tone of AUP 16. AUP 16 para 31 states that "the auditor should normally regard the duty of confidentiality to the entity as preventing the reporting of any matters concerning the entity's affairs to a third party...". Arguably, corporate fraud did not emerge as a matter of significant public concern until the late 1980s and the profession has not yet fully responded. Also, in general, Australian auditors have met less public and political pressure to extend their duties in this regard than have US auditors.

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<sup>15</sup> The audit expectation gap is defined as the gap between the public's expectations of auditors and auditors' perceived performance. There are two components of the gap. Firstly, a gap between what the public expects auditors to achieve and what they can reasonably be expected to accomplish. Secondly, a gap between what the public can reasonably expect auditors to accomplish and what they are perceived to achieve from the law and professional promulgation (Porter, 1991).

Tomasic and Bottomley (1993) mention that the auditing profession in Australia has long held the view that management has the role of detecting financial fraud, and that detection of fraud by auditors is secondary to their primary duty of reporting whether the accounts are true or fair. The Statement of Auditing Standards, AUS 1 para 7 states that

While the auditor is responsible for forming and expressing an opinion on the financial information, the responsibility for its preparation lies with the management of the entity...(and) the audit of the financial information does not relieve management of its responsibilities.

Moreover, there is no statutory obligation for the auditor to report fraud where the auditor believes that the financial statements give a true and fair view of the accounts of the company [Corporations Law s332(10)].

Porter (1994) explicitly identifies differences between Australian and US auditing regulations relating to detection of fraud since 1986. In Australia, the requirements have been promulgated in the Statement of Auditing Practice (AUP) 16, "The Auditor's Responsibility for Detecting and Reporting Irregularities Including Fraud, Other Illegal Acts and Error", (AARF, 1993)<sup>16</sup>, whereas in the US, they are promulgated in Statement of Auditing Standards (SAS) No.53, "The Auditor's Responsibility to Detect and Report Errors and Irregularities" (AICPA, 1988)<sup>17</sup>. AUP 16 states in paragraph 12 that primary responsibility for detecting fraud rests with the management/governing body, but SAS No.53 does not mention this explicitly. SAS No.53 para 28 also requires auditors to inform the audit committee or board of

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<sup>16</sup> This statement is now superseded by Statement of Auditing Standards (AUSs) 210, "Irregularities, Including Fraud, Other Illegal Acts and Errors", but it has the same emphasis.

<sup>17</sup> It is replaced by SAS No.82, which has similar requirements (see Eining et al., 1997).

directors when suspected fraud is encountered. However, Porter notes the somewhat defensive statement mentioned earlier, included in AUS 16 para 13, to the effect that auditors have no responsibility in relation to irregularities which do not have a material effect on the financial report.

Such a statement is not included in SAS No.53 which requires auditors to plan and conduct their audits to reasonably detect irregularities, which have a material effect on the financial report. Porter (1994) argues that it seems that in the US auditors have accepted a more significant responsibility for detecting fraud.

To sum up, it is not mandatory for firms to form audit committees in Australia, compared to a mandatory requirement in the US. In terms of auditing regulations, the auditors' responsibility to detect fraud appears to be more significant for auditors in the US, than for auditors in Australia. This implies that Australian managers can have more opportunity to manage earnings than US managers. It can also be assumed that auditors face a more litigious environment in the US than in Australia. As a consequence, there is more onus on auditors in the US to detect misstatement and irregularities. This can mitigate management incentives to manage earnings. In the context of income smoothing it is predicted that:

**H4: The incidence of income smoothing is higher for firms originating from Australia than for firms originating from the US.**

### ***3.7 Conclusion***

To conclude this chapter; agency costs that arise from contractual relationships, combined with information asymmetry, lead to a demand for investment in control and monitoring mechanisms. Audit committees and external auditing are elements in corporate governance. The presence of audit committees and top tier auditor designation, are predicted to be associated negatively, both individually and in combination, with the opportunity for Australian managers to smooth earnings. The governance practices within the US and Australia developed under different circumstances, create differences in the focus of the respective systems. Since it is arguable that the regulatory body in the US is stricter than in Australia in regards to the requirement to form audit committees and to detect fraud, Australian managers appear to be more likely to be involved in income smoothing than US managers. The following chapter describes the research design used to test these hypotheses.

## **Chapter 4: Method**

### ***4.1 Introduction***

The objective of this chapter is to describe the methods and measurements employed to test the hypotheses developed in the previous chapter. The chapter comprises four sections. The sample selection section describes criteria used to select firms from the COMPUSTAT and Connect4 databases. Section 4.3 explains why discretionary accruals are appropriate to capture earnings management and how they are measured. Income smoothing measurement is described in section 4.4, and the last section in this chapter explains the research design. The logistic multivariate regression models are defined and the independent variables are explained.

### ***4.2 Sample selection***

The sample is chosen from firms contained in the 1998 COMPUSTAT Industrial Files and Connect4 databases. The sample includes companies with COMPUSTAT data available for each of the fiscal years ending in 1992 through to 1995. The firms listed on the database are supplemented with firms with similar data listed on Connect4. The sample years of 1992-1995 are employed as a means of capturing the effectiveness of auditing and audit committee regulations in Australia. In March 1993, the AuSB revised AUP 16 and on 1 July 1995, the ASX introduced disclosures of corporate governance practices.

The study employs an industry cross-sectional research design. Candidates for inclusion in the sample are required to have financial statement data available on

COMPUSTAT industrial files for 1992 to 1995. They are also required to have a minimum of ten firms (with available financial statement data) in the two digit ASX industry group. The use of a two-digit ASX code reflects a trade-off between narrowly defining industry groupings to capture industry specific effects versus having enough firms in each industry grouping to obtain statistically meaningful estimates of non-discretionary accruals in equation (1a) in section 4.3 (Dechow et al., 1995). Identical criteria are applied to the US sample firms, which are matched with the Australian firms, based on SIC-ASX equivalent industry classification. Financial institutions are deleted because discretionary accruals estimation is problematic for these firms<sup>18</sup>. Firms are eliminated due to missing data that are needed to measure accruals. Firms are also excluded because of extreme values. This selection process yields a full sample of 2402 firm-year observations (948 firms) with sufficient data to measure discretionary accruals and the variables required for the multivariate analysis. There are 335 Australian firm years (147 firms) and 2067 US firm years (801 firms). Table 1 summarises the sample and its industry breakdown<sup>19</sup>.

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<sup>18</sup> Financial institutions have different financial structures and regulations compared to non-financial institutions.

<sup>19</sup> In terms of the US sample, firms are selected from SP500 and NASDAQ.

**Table 1**  
**Sample Selection**

	Aus data	US data *)
Firm-years (1992-1995) for firms with non-missing accruals data 1993-1995 and excluding financial institutions	411	2121
Less Industry-year combination with < 10 observations	76	0
Less Extreme value of reported earnings before taxes	0	54
Final sample (firm-years)	335	2067

\*) The sample consists of industries with SIC Classification similar to ASX Industry Classification of the Australian sample. The initial number before excluding industries, which are not equivalent to ASX Industry Classification is 8872 firm-years in 43 industries (3447 firms).

**Industry representation of firms in sample**

Australian data	Firm-years	US data	Firm-years
- Gold	73	- Metal mining	125
- Other metals	42	- Oil and Gas extraction	313
- Oil & Gas	38	- Constructions	35
- Dev & Contr	34	- Food & Kindred products	262
- Building materials	32	- Apparel	89
- Food & Household	48	- Printing, Publishing & Allied	127
- Engineering	11	- Primary metal industries	116
- Retail	33	- Fabr Metal	135
- Media	24	- Communications	246
		- Wholesale - durable goods	339
		- Wholesale - non durable goods	134
		- Retailer	23
		- General merchandise stores	67
		- Food stores	56
Total	335	Total	2067
Number of firms	147	Number of firms	801

In terms of selecting Australian firms, this study employs the ASX code rather than the SIC code in order to mitigate the possibilities that Australian firms are classified wrongly in non-Australian databases. For example, investment services are not classified as financial institutions in the SIC coding. Miscellaneous and diversified industries are excluded from the sample to obtain similar characteristics in each industry as much as possible for both sub samples.

### ***4.3 Estimation of discretionary accruals***

The literature uses several models for estimating discretionary accruals. Dechow, Sloan and Sweeney (1995) evaluate several commonly used accrual-based models for detecting earnings management, including techniques used in Healy (1985), DeAngelo (1986) and several variations of the Jones (1991) model (or modified Jones (1995) model). They conclude from their evaluation that the modified Jones (1995) model appears well-specified in a random sample of firms.

The Jones (1991) time series approach to discretionary accruals measurement requires a substantial time series of data as well as a stationarity assumption<sup>20</sup>. Hence, it introduces survivorship bias. As a means of mitigating this problem, Young (1998) employs a cross sectional version (modified) of the Jones (1991) model. Young also mentions that an additional benefit of this approach is that it does not need the assumption of a stationary association between non-discretionary accruals and the explanatory variables through time. Discretionary accruals are measured in this study using the cross-sectional modified Jones (1995) accruals estimation model reported in Subramanyam (1996). This technique estimates “normal” accruals as a function of the change in revenues and the level of property, plant and equipment. These variables control for changes in accruals that are due to changes in the firm's economic condition and treat those accruals as "normal" or non-discretionary, as opposed to accruals manipulation. The change in revenue is included because changes in working capital accounts, part of total accruals, depend on changes in revenue. Property, plant and equipment is used to control for the portion of total accruals related to nondiscretionary



depreciation expense. The portion of total accruals unexplained by normal operating activities is discretionary accruals (i.e., managerial discretion).

The Jones (1991) model, as modified by Dechow et al. (1995) is used to estimate discretionary accruals, as follows:

$$DA_t = TA_t - [\alpha_t(1/A_{t-1}) + \alpha_2(\Delta Rev_t - \Delta Rec_t) + \alpha_3(PPE_t)] \quad (1a)$$

Where:

$TA_t = [ \Delta \text{current assets}_t - \text{current liabilities}_t - \Delta \text{cash}_t + \Delta \text{short term debt}_t - (\text{depreciation and amortisation expense})_t ] / \text{total assets}_{t-1}$ , where the change ( $\Delta$ ) is computed between time  $t$  and time  $t-1$

$A_{t-1}$  = total assets at time  $t-1$  (lagged assets)

$\Delta Rev_t$  = Change in operating revenue between time  $t$  and time  $t-1$  / total assets at time  $t-1$

$\Delta Rec_t$  = Change in net receivables between time  $t$  and time  $t-1$  / total assets at time  $t-1$

$PPE_t$  = Gross property, plant and equipment at time  $t$  / total assets at time  $t-1$

Ordinary least squares regression is used to obtain estimates  $\alpha_{1it}$ ,  $\alpha_{2it}$ , and  $\alpha_{3it}$  from the equation as follow:

$$TA_{it} = [\alpha_{1it}(1/A_{it-1}) + \alpha_{2it}(\Delta Rev_{it}) + \alpha_{3it}(PPE_{it})] \quad (1b)$$

All variables are scaled by lagged assets to reduced heteroskedasticity in the disturbance term and to allow comparison across firms of different size<sup>21</sup>.

#### 4.4 Income Smoothing

Many of the early smoothing studies examine the smoothing devices that companies used to smooth income, such as extraordinary items (e.g., Craig and Walsh, 1989; Beattie et al., 1994; and Godfrey and Jones, 1999). However, Zmijewski and Hagerman

<sup>20</sup> It is assumed that the coefficients obtained in the estimation period are fixed for every year.

<sup>21</sup> This study does not use Godfrey & Culvenor (1998) procedures that measure PPE inclusive of goodwill, and excluding land to increase the explanatory power of discretionary accruals because it is difficult to separate land from PPE and goodwill from Other Assets categories in the COMPUSTAT database. A later study also indicates that gross values are better than net values of PPE to measure discretionary accruals (Culvenor et al., 1999).

(1981) suggest that the election of accounting procedures is not exercised independently. Rather, management considers the overall effect of all accounting procedures on income. This can be achieved through a range of decisions that affect accruals. Contemporary studies have therefore used accruals based measures of accounting discretion as a means of improving the specification of the managements' reporting decisions (see Wardfield, 1995; Young, 1998).

Managers who engage in income smoothing use discretionary accruals to reduce the volatility of reported earnings around target earnings over time. This involves reducing the difference between actual operating profit before taxes and targeted operating profit before taxes, using discretionary accruals. To measure income smoothing, NDE (non-discretionary earnings) is measured using the industry based cross-sectional version of the Jones model scaled by total assets, and a smoothing proxy, "Smooth\_1" is calculated as follows:

$$\text{Smooth}_1 = 1 \text{ if } |\text{Target}Y_{it} - Y_{it}| < |\text{Target}Y_{it} - \text{NDE}_{it}|;$$

$$\text{Otherwise, Smooth}_1 = 0$$

Where:

$\text{Target}Y_{it}$  = Target earnings<sub>it</sub> = median earnings for industry<sub>t-1</sub> / total assets<sub>t-1</sub>

$\text{NDE}_t = Y_t - \text{Da}_t$

$\text{Da}_t$  = discretionary accruals / total assets at time<sub>t-1</sub>

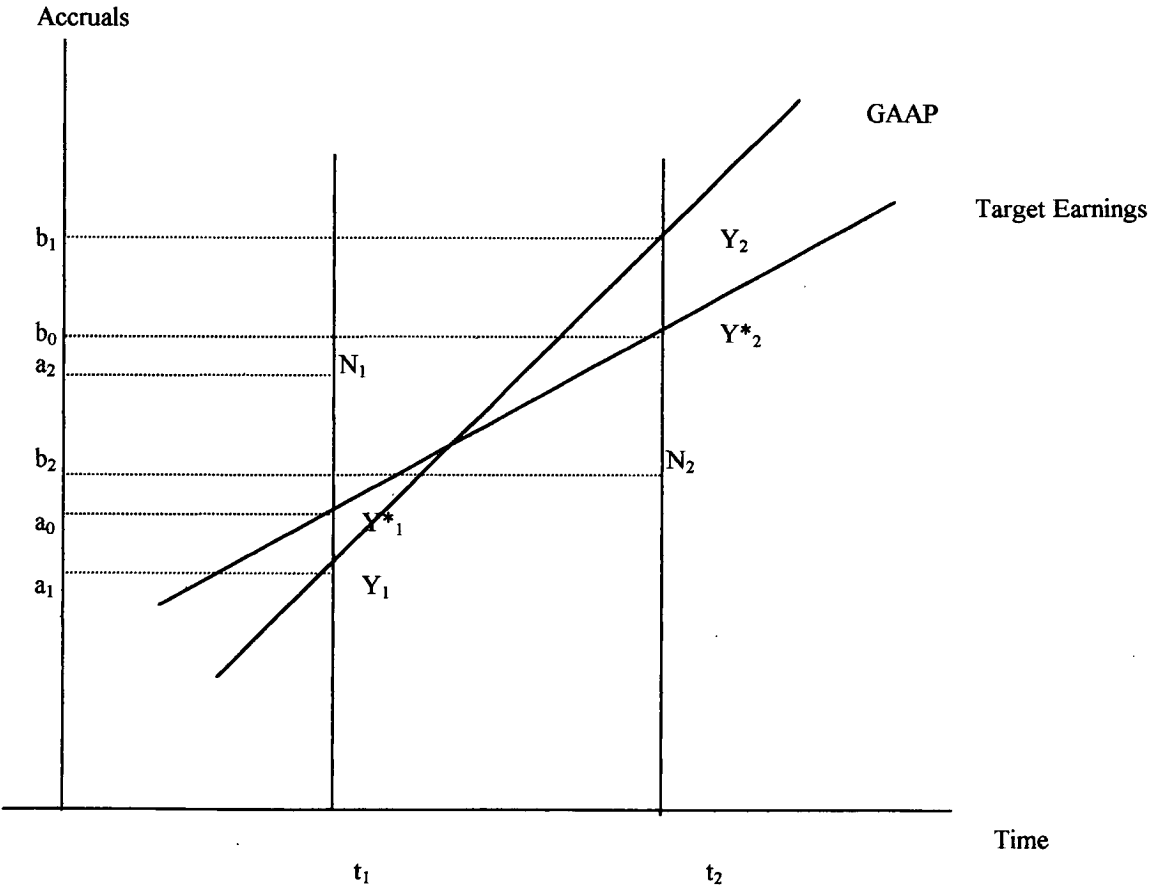
$\text{NDE}_t$  = earnings before discretionary accruals / total assets at time<sub>t-1</sub>  
(pre-managed earnings)

$Y_t$  = operating profit before tax / total assets at time<sub>t-1</sub> (reported earnings)

Figure 1 illustrates how managers move earnings in the direction to get closer to their assessment of target earnings. Assume that  $Y_t^*$  represents the target earnings level in year t. Firms smooth earnings when reported earnings exceed target earnings by less

than the excess of pre-managed earnings over target earnings. Graphically, in  $t_1$ , it is represented that  $|a_0 - a_1|$  is less than  $|a_0 - a_2|$ . In  $t_2$ , it is represented that  $|b_0 - b_1|$  is less than  $|b_0 - b_2|$ . The use of absolute values is assumed because the measurement focuses on the fluctuation around earnings targets rather than the direction of earnings management to get closer to target earnings. However, it should be noted that since target earnings are measured by using the median of reported earnings in  $t-1$ , smoothing becomes sensitive to the changes in the macro economic growth in certain industries.

**Figure 1 :** Income smoothing:  $| \text{Target}Y_{it} - Y_{it} | < | \text{Target}Y_{it} - NDE_{it} |$



Notes:  $Y_t$ : actual reported earnings for year  $t$ ,  $N_t$ : pre-managed earnings for year  $t$  (i.e., computed as  $Y_t - Da_t$ ,  $Da_t$ : discretionary accruals for year  $t$ , and  $Y^*$ : previous year median industry earnings.

#### **4.5 Research design and measurements**

Logit regression is used to test the hypotheses. The logit model can be considered to be more powerful than OLS when modelling dichotomous data. The general form of the categorical response model in logit form that is employed in this thesis is as follows:

$$P_i = P(\beta, X_i) + \varepsilon_i \text{ with } E[\varepsilon_i] = 0$$

The logistic regression model assumes that  $\varepsilon_i$  follows a log normal distribution. Hence  $P_i$  (i.e., the probability of a firm being classified as a smoother) is a function of:

$$\text{Ln} [P_i / (1 - P_i)]$$

which can be written as:-

$$\text{Logit} (P_i) = \alpha + \sum(\beta_i, X_{ij})$$

with X being a vector of explanatory variables representing the unknown parameters estimated from the data. The significance of the model is tested using the -2 log-likelihood ratio, distributed as a chi-square with k-1 degree of freedom, with k equal to the number of independent variables.

Firm classification is regressed on a series of independent variables reflecting whether the firms have audit committees, use top tier auditors, or have Australian or US listing. Additional variables are incorporated to control for additional smoothing incentives related to leverage, firm size and growth. The coefficients in the following regression model are estimated, with predicted signs indicating the expected direction of the coefficients.

The multivariate analysis regression models are as follows:

$$\text{SMOOTH\_1}_i = \alpha + \beta_1 \text{AC}_i + \beta_2 \text{AUD}_i + \beta_3 \text{SIZE}_i + \beta_4 \text{LEV}_i + \beta_5 \text{IND}_i + \beta_6 \text{NATION}_i + \beta_7 \text{GROWTH}_i + \varepsilon_i \quad (2)$$

(-)        (-)        (+)        (+)        (+)        (+)        (-)

$$\text{SMOOTH\_1}_i = \alpha + \beta_1 \text{SIZE}_i + \beta_2 \text{LEV}_i + \beta_3 \text{IND}_i + \beta_4 \text{NATION}_i + \beta_5 \text{GROWTH}_i + \beta_6 (\text{AC}_i \times \text{AUD}_i) + \varepsilon_i \quad (3)$$

(+)        (+)        (+)        (+)        (-)        (-)

$$\text{SMOOTH\_1}_i = \alpha + \beta_1 \text{AC}_i + \beta_2 \text{AUD}_i + \beta_3 \text{SIZE}_i + \beta_4 \text{LEV}_i + \beta_5 \text{IND}_i + \beta_6 \text{NATION}_i + \beta_7 (\text{AC}_i \times \text{AUD}_i) + \beta_8 \text{GROWTH}_i + \varepsilon_i \quad (4)$$

(-)        (-)        (+)        (+)        (+)        (+)        (-)        (-)

Equation (2) is used to test H1, H2, and H4, equation (3) is employed to test H3 and H4. Equation (4) is employed to test H1, H2, H3 and H4 simultaneously.

The definition for each variable is as follows:

#### *SMOOTH\_1*

Smooth\_1, the dependent variable, indicates the probability of a firm being an income smoother. It is a zero (0) or one (1) categorical variable with the value equal to one (1) if the firm is identified as an income smoother. A firm is classified as an income smoother if  $|\text{TargetY} - Y|$  is less than  $|\text{TargetY} - \text{NDE}|$ ; and 0, otherwise.

#### *AUDIT COMMITTEE (AC)*

A dummy variable is coded 1 if the board of directors has an audit committee, 0, otherwise. Negative sign of the coefficient is expected to capture audit committees' roles in reducing income smoothing.

### *TOP TIER AUDITOR (AUD)*

The most common proxy for audit quality in empirical studies is a dummy variable for Big Six/non-Big Six membership (currently Big Five, previously Big Eight) - a top tier auditor (Palmrose, 1988; DeFond and Jiambalvo, 1991) and results are fairly consistent in support of this measure. The variable is coded 1 if the firm is audited by a top tier auditor, 0 otherwise. A negative sign is expected.

### *LEVERAGE (LEV)*

In the extant literature leverage is frequently used as a proxy for closeness to debt covenants and is associated with the presence and tightness of those covenants (see Press and Weintrop, 1990). Corporate lending contracts often contain accounting-based covenants. A covenant is a provision, such as a limitation on the payment of dividends, which restricts the firm from engaging in specified actions after the bonds are sold. Debt covenants are either affirmative or negative covenants. Affirmative covenants require borrowing firms to maintain specific levels of accounting-based numbers (e.g., minimum working capital and interest coverage). Negative covenants restrict the financing and investing activities of borrowing firms (e.g., dividend payments and issuance of new debt).

Dechow et al. (1996) find that there is an association between avoiding debt covenant restrictions and motivations for earnings manipulation. A covenant that becomes restrictive imposes costs on firms. Managers have incentives to choose accounting procedures that reduce the probability of a breach (Watts and Zimmerman, 1986). Such procedures can increase assets, reduce liabilities, increase revenue, and decrease

expense (ie non-conservative procedures) if they are close to covenant violation. Hence, it has been predicted that the larger a firm's debt/equity ratio (leverage ratio), the more likely the firm's manager is to select accounting procedures that shift reported earnings from future periods to the current period. The closer a firm is to a particular restrictive accounting based covenant, the more likely the manager is to use procedures that increase current earnings. However, the application of an aggressive policy may arouse auditor concerns because it violates the accounting principle of conservatism. Also, in a multi-period context, managers may prefer to smooth income if their firms have high debt. This enables them to draw upon "reserve" earnings to boost assets and reduce leverage in future periods.

In this study, leverage is measured as total debt scaled by total assets. A positive sign is predicted since there is a trade off between managers' efforts to choose income-increasing discretionary accruals when the leverage ratio is high, and auditors' efforts to constrain earnings management.

#### *FIRM SIZE (SIZE)*

Regardless of whether they have audit committees, firms' propensity to smooth may vary with firm size. Davidson (1984) reported that of the largest 56 companies that owned assets greater than \$201 million, 46 percent had audit committees. Of companies with less than \$201 million in assets, only 20 percent had audit committees. He concluded that the larger the company, the more likely that it would have an audit committee. In the 1992 survey conducted by Arthur Andersen, larger companies which

had an annual turnover of more than \$100 million, were significantly more likely than other companies to have established an audit committee ( $p < 0.01$ ).

Pincus et al. (1989) argue that the existence of economies of scale associated with audit committee formation and operation implies that the net benefit of audit committee formation increases with firm size. This leads to an expected positive relation between firm size and use of audit committees. Small firms may not form an audit committee in particular circumstances since they may have other options for handling corporate governance matters, such as through the full board of directors. In addition, small firms may not find it economically feasible to finance audit committees. Therefore, forming and maintaining an audit committee would be more cost effective for larger firms. Consistent with this argument, Defond and Jiambalvo (1991) use firm size to proxy for the strength of the firms' internal controls. The above arguments, in combination with hypothesis H1, imply that large firms are less likely to smooth income than small firms.

However, the political cost hypothesis provides a contrary argument. Size is often used as a proxy for political attention (Watts and Zimmerman, 1986). The underlying reason is that it is costly to find information about whether accounting numbers (e.g., earnings) reflect monopoly benefits and to then reach agreement with others in the political process to legislate laws and regulations that increase their welfare (Watts and Zimmerman, 1990). Since information and monitoring are costly to obtain and process, rational political players will focus on readily available and verifiable information, such as large firms' high reported earnings, to provide evidence of monopoly rents or



to indicate that industry protection is no longer necessary. In turn, this creates incentives for managers of large firms to apply discretion over accounting profits (i.e., earnings management) used in the political process. Firms with high political costs exposures have been found to engage in income smoothing more than other firms (Godfrey and Jones, 1999). Managers, lenders and shareholders, alike, have similar interests in avoiding government intervention (e.g., abolishing tariff barriers) and public scrutiny. Hence, in contrast to hypothesis H1, it is expected that the incidence of income smoothing is greater in larger firms than in small firms.

Size is defined as the natural log of total assets. It is predicted that there is a positive relation between firm size and smoothing since large firms are more likely to be exposed to high political costs, and to use accounting techniques to smooth income. The political cost hypothesis predicts that firms will use income-reducing techniques. However, in a multi-period context, managers are likely to be concerned about the political attention attracted by volatile earnings as well as by high levels of earnings (Godfrey and Jones, 1999).

#### *INDUSTRY (IND)*

Industry (IND) is used as a control for differential earnings management, which can occur in different industries (Beattie et al., 1994). It is calculated using a dummy variable, 1 for the mining industry and 0 for the non-mining industry classification. The purpose of this variable is to control the effects of the set of accounting methods, which varies between industrial and several mining industries because the sample firms are drawn from several industries (Watt and Zimmerman, 1990). For example, accounting

for pre-production costs and mineral reserves differs considerably from retail firms' methods of accounting for inventories (Culvenor et al., 1998).

### *GROWTH*

Growth is measured as current year operating profits minus prior year operating profits, scaled by total assets. Total assets form the denominator because research on earnings management has shown that management compensation is usually linked to some earnings based performance measure. The results of Healy's (1985) study suggest that managers may have incentives to increase earnings to reach a "target" level of earnings growth. Meanwhile Defond and Jiambalvo (1991, 1993) find that companies that restate annual earnings have lower growth in earnings than companies without earnings corrections. In line with this, firms in a weak financial position are more likely to look for ways to increase earnings and thus may override controls (McMullen, 1996). The purpose of using this variable is to proxy other incentives to manage reported earnings.

### *NATION*

Nation is a variable that takes the value 1 for firms listed on the Australian Stock Exchange but not on the US stock exchange, and 0 for all firms listed on the US exchange. A nationality variable is employed for other studies of international differences in income smoothing (Ashari et al., 1994 and Langendijk and Van Praag, 1996). A positive sign is expected to support the hypothesis that Australian firms are more likely to smooth earnings than US firms.

#### *AC\_AUD*

AC\_AUD is a variable that depicts the interaction of audit committees with a top tier auditor in constraining smoothing behaviour. The variable is coded 1 if firms have both audit committees and top tier auditors; 0 otherwise. A negative sign is expected to reflect the high level of ability of audit committees in monitoring and overseeing management activities when in conjunction with top tier external auditing.

#### ***4.6 Conclusion***

This chapter describes the research design employed to test the hypotheses developed in Chapter 3. The following chapter reports the results.

## **Chapter 5: Analysis of results**

### ***5.1 Introduction***

The results are reported in this chapter. The descriptive statistics, univariate tests and logit analyses are summarised in section 5.2. In section 5.3, the results are discussed and analysed. The following sections explain the sensitivity analysis used to verify the robustness of the results, and section 5.6 concludes the chapter.

### ***5.2 Results***

The descriptive statistics of the observations are presented in Panel A Table 2. In terms of accrual variables, there are some differences and variances between the national sub samples. Average reported earnings (Y) are 1.26% of the lagged total assets. Average total accruals are negative, while mean and median discretionary accruals (Da) are close to zero. The standard deviation of reported earnings (Y) is less than reported for the pre-managed earnings variable (NDE), suggesting that the accrual process in this study smooths reported earnings. The mean and [median] pre-managed earnings of Australian firms are higher than those for US firms (i.e., 0.0673 and [0.0751]; and 0.0023 and [0.0336] respectively). The standard deviation of reported earnings of Australian firms (i.e., 0.1318) is less than that reported for pre-managed earnings (i.e., 0.1907), suggesting that the accrual process smooths reported earnings. Similarly, in the US data, the standard deviation of reported earnings (i.e., 0.2740) is less than that reported for pre-managed earnings (i.e., 0.3284).

**Table 2**

**Panel A: Descriptive statistics used to calculate discretionary accruals and other variables in the period between 1993 - 1995**

	Mean	Median	SD	Skew	Min	Percent 25	Percent 75	Max
<b>Pooled sample</b>								
Total Accruals	-0.0255	-0.0390	0.2417	-0.7858	-3.4537	-0.0984	0.0234	1.8093
cg(Rev -Rec)	0.2070	0.0783	0.6164	4.2943	-3.8596	-0.0082	0.3001	9.4264
PPE	0.8471	0.6460	1.1884	8.4453	0.0000	0.3054	1.0491	23.1591
DA	0.0013	-0.0057	0.2111	0.5983	-2.3047	-0.0687	0.0537	2.5284
NDE	0.0113	0.0411	0.3136	2.9606	-2.5624	-0.0810	0.1438	6.5668
Y	0.0126	0.0458	0.2597	6.0340	-0.9996	-0.0656	0.1270	6.5385
<b>Aus sample</b>								
Total Accruals	-0.0478	-0.0458	0.1716	0.5721	-0.9777	-0.1062	0.0054	0.8493
cg(Rev -Rec)	0.1264	0.0468	0.4398	3.4256	-1.2283	-0.0144	0.1690	3.3181
PPE	0.7743	0.7112	0.5593	2.3999	0.0031	0.4248	1.0181	4.5298
DA	-0.0010	0.0022	0.1360	1.7365	-0.4836	-0.0517	0.0431	0.9774
NDE	0.0673	0.0751	0.1907	-1.2599	-1.1266	-0.0017	0.1582	0.8754
Y	0.0663	0.0758	0.1318	-0.9743	-0.6463	0.0292	0.1283	0.6580
<b>US sample</b>								
Total Accruals	-0.0219	-0.0379	0.2511	-0.8671	-3.4537	-0.0971	0.0274	1.8093
cg(Rev -Rec)	0.2201	0.0846	0.6396	4.2568	-3.8596	-0.0067	0.3220	9.4264
PPE	0.8588	0.6374	1.2609	8.1631	0.0000	0.2821	1.0620	23.1591
DA	0.0017	-0.0076	0.2209	0.5385	-2.3047	-0.0716	0.0582	2.5284
NDE	0.0023	0.0336	0.3284	3.0915	-2.5624	-0.0951	0.1411	6.5668
Y	0.0039	0.0375	0.2740	6.0664	-0.9996	-0.0795	0.1266	6.5385

Total Accruals =  $[\Delta \text{current assets}_t - \text{current liabilities}_t - \Delta \text{cash}_t + \Delta \text{short term debt}_t - (\text{depreciation and amortisation expense})_t] / \text{total assets}_{t-1}$ , where the change ( $\Delta$ ) is computed between time  $t$  and time  $t-1$ .

$\Delta \text{Rev}$  = Change in operating revenue between time  $t$  and time  $t-1$  / total assets at time  $t-1$

$\Delta \text{Rec}$  = Change in net receivables between time  $t$  and time  $t-1$  / total assets at time  $t-1$

PPE = Gross property, plant and equipment at time  $t$  / total assets at time  $t-1$

NDE =  $Y - Da$

$Da$  = discretionary accruals / total assets at time  $t-1$

NDE = earnings before discretionary accruals / total assets at time  $t-1$

Y = operating profit before tax / total assets at time  $t-1$

**Table 2**

**Panel B:** Descriptive statistics of dependent and independent variables in the period between 1993 - 1995

	Mean	Median	SD	Skew	Min	Percentile 25	Percentile 75	Max
<b>Pooled sample</b>								
SMOOTH_1	0.5745	1.0000	0.4945	-0.3016	0.0000	0.0000	1.0000	1.0000
SMOOTH_2	8.1383	0.9175	282.5763	48.7370	0.0007	0.5244	1.3392	13825.1581
GROWTH1	0.0614	0.0105	0.2351	13.6565	0.0000	0.0000	0.0498	5.4301
SIZE	4.8119	4.7442	0.9875	0.4417	2.0645	4.0956	5.3774	7.9488
AUD COMM	0.9742	1.0000	0.1587	-5.9800	0.0000	1.0000	1.0000	1.0000
AUD	0.7398	1.0000	0.4388	-1.0938	0.0000	0.0000	1.0000	1.0000
IND	0.2460	0.0000	0.4308	1.1800	0.0000	0.0000	0.0000	1.0000
AC_AUD	0.7132	1.0000	0.4524	-0.9432	0.0000	0.0000	1.0000	1.0000
LEV1	0.4608	0.4823	0.2370	-0.1102	0.0000	0.2881	0.6372	0.9974
<b>Aus sample</b>								
SMOOTH_1	0.6179	1.0000	0.4866	-0.4875	0.0000	0.0000	1.0000	1.0000
SMOOTH_2	1.5153	0.8964	3.1882	8.0395	0.0011	0.4779	1.2712	41.3595
GROWTH	0.0509	0.0092	0.3153	15.4747	0.0000	0.0000	0.0363	5.4301
SIZE	5.3218	5.2310	0.8103	-0.2207	2.7202	4.8624	5.9082	7.4799
AUD COMM	0.7918	1.0000	0.4067	-1.4448	0.0000	1.0000	1.0000	1.0000
AUD	0.7433	1.0000	0.4375	-1.1189	0.0000	0.0000	1.0000	1.0000
IND	0.4567	0.0000	0.4989	0.1746	0.0000	0.0000	1.0000	1.0000
AC_AUD	0.5522	1.0000	0.4980	-0.2111	0.0000	0.0000	1.0000	1.0000
LEV	0.4395	0.4684	0.1904	-0.2338	0.0111	0.3052	0.5721	0.9957
<b>US sample</b>								
SMOOTH_1	0.5675	1.0000	0.4955	-0.2726	0.0000	0.0000	1.0000	1.0000
SMOOTH_2	9.2117	0.9212	304.6095	45.2121	0.0007	0.5303	1.3528	13825.1581
GROWTH	0.0631	0.0106	0.2194	12.1637	0.0000	0.0000	0.0526	5.1751
SIZE	4.7292	4.6116	0.9890	0.5919	2.0645	4.0216	5.2819	7.9488
AUD COMM	1.0000	1.0000	0.0000		1.0000	1.0000	1.0000	1.0000
AUD	0.7392	1.0000	0.4392	-1.0906	0.0000	0.0000	1.0000	1.0000
IND	0.2119	0.0000	0.4088	1.4110	0.0000	0.0000	0.0000	1.0000
AC_AUD	0.7392	1.0000	0.4392	-1.0906	0.0000	0.0000	1.0000	1.0000
LEV	0.4769	0.4936	0.2342	-0.0842	0.0023	0.2975	0.6530	0.9974

Smooth\_1 = 1 if  $|TargetY_{it} - Y_{it}| < |TargetY_{it} - NDE_{it}|$ ; 0, otherwise.

Smooth\_2 =  $|TargetY_{it} - Y_{it}| / |TargetY_{it} - NDE_{it}|$

Where:

NDE =  $Y - Da$

Da = discretionary accruals / total assets at time  $t-1$

NDE = earnings before discretionary accruals / total assets at time  $t-1$

Y = operating profit before tax/ total assets at time  $t-1$

TargetY<sub>it</sub> = Target Earnings<sub>it</sub> = Median earnings for industry<sub>t-1</sub>/ total assets at time  $t-1$

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.

AUD : A dummy variable is coded 1 if firm audited by top tier auditors, 0, otherwise.

SIZE : Log10 of Total Assets

LEV : Total Liabilities scaled by Total Assets

IND : A dummy variable is coded 1 for mining firms, 0, otherwise.

NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.

AC\_AUD : A dummy variable is coded 1 if firms have audit committees and top tier auditors, 0, otherwise.

GROWTH : Current year's operating profits - prior year's operating profits scaled by total assets

Table 2 also includes explanatory and control variables described in previous chapters, except for the presence of audit committees (AUD COMM) of US firms since it is assumed that all US firms have audit committees. In panel B, the Australian sample is dominated more by mining firms than is the US sample (IND=0.4567 and IND=0.2119, respectively). Furthermore, the Australian firms are more likely to smooth earnings than are the US firms. This is indicated by the higher mean of Smooth\_1 and the lower mean of Smooth\_2 for Australian firms (i.e., 0.6179 and 1.5153, compared with 0.5675 and 9.2117 for US firms). The standard deviations of those variables (Smooth\_1) for Australian firms are lower than the standard deviations of firms from the US (i.e., 0.4866 and 0.4955 respectively). Since the continuous form of smoothing index (SMOOTH\_2) is highly skewed for both sub-samples, the binary code is used in analysing the data.

**Table 3 Correlation matrix (pooled sample)**

Variable		AC_AUD	GROWTH	IND	LEV	SIZE	AUD	AUD COMM	NATION
AC_AUD		1.000							
GROWTH		-0.049	1.000						
IND		-0.127	0.099	1.000					
LEV		0.197	-0.035	-0.345	1.000				
SIZE		0.410	-0.191	-0.301	0.354	1.000			
AUD		0.935	-0.036	-0.095	0.177	0.425	1.000		
AUD COMM		0.265	-0.038	-0.059	0.057	-0.039	0.032	1.000	
NATION		-0.143	-0.018	0.197	-0.057	0.208	0.003	-0.433	1.000

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.  
 AUD : A dummy variable is coded 1 if firm audited by top tier auditors, 0, otherwise.  
 SIZE : Log10 of Total Assets  
 LEV : Total Liabilities scaled by Total Assets  
 IND : A dummy variable is coded 1 for mining firms, 0, otherwise.  
 NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.  
 AC\_AUD : A dummy variable is coded 1 if firms have audit committees and top tier auditors, 0, otherwise.  
 GROWTH : Current year's operating profits - prior year's operating profits scaled by total assets

The correlation matrix appears in Table 3. Top tier auditors (AUD) are highly correlated with the variable called “interactions between audit committees and top tier audit committees” (AC\_AUD) as is to be expected, given that it forms part of the measure. Large firms tend to use both top tier auditors and have audit committees (Pearson correlation = 0.410). The correlation is also significant for SIZE and top tier auditor designation, and for industry categorisation (i.e., mining and non-mining firms), nationality, and size ( $p < 0.01$ ). Another high correlation occurs between SIZE and leverage (Pearson correlation = 0.354).

To assess whether the independent variables differ significantly across smoothers and non-smoothers, t-tests and Mann-Whitney U tests are performed. The results of these univariate tests are summarised in Table 4.



**Table 4**  
**Descriptive Statistics and Univariate Results (Pooled Australian and US data):**  
**Independent Variables and their association with Smoothing**

Variable	SMOOTH_1	N	Mean	SD	t-test		Mann-Whitney U	
					t	p (1-tailed)		p (1-tailed)
AC_AUD	1	1380	0.705797	0.455849	-0.926355	0.177177	692984.00	0.177124
	0	1022	0.723092	0.447690				
NATION	1	1380	0.150000	0.357201	1.731884	0.041711	687723.00	0.041711
	0	1022	0.125245	0.331158				
IND	1	1380	0.257246	0.437275	1.481191	0.069343	686615.00	0.069327
	0	1022	0.230920	0.421628				
LEV	1	1336	0.475507	0.227995	0.958273	0.169013	630748.00	0.156897
	0	968	0.466249	0.230116				
SIZE	1	1380	4.848392	0.963222	2.108892	0.017529	656801.50	0.001996
	0	1022	4.762510	1.017749				
AUD	1	1380	0.735507	0.441223	-0.557044	0.288774	698065.00	0.288721
	0	1022	0.745597	0.435738				
GROWTH	1	1380	0.057603	0.183163	-0.925445	0.177414	686505.00	0.125020
	0	1022	0.066582	0.290891				
AUD COMM	1	1354	0.972674	0.163093	-0.525108	0.299779	678699.00	0.299726
	0	1006	0.976143	0.152679				

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.  
 AUD : A dummy variable is coded 1 if firm audited by top tier auditors, 0, otherwise.  
 SIZE : Log10 of Total Assets  
 LEV : Total Liabilities scaled by Total Assets  
 IND : A dummy variable is coded 1 for mining firms, 0, otherwise.  
 NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.  
 AC\_AUD : A dummy variable is coded 1 if firms have audit committees and top tier auditors, 0, otherwise.  
 GROWTH : Current year's operating profits - prior year's operating profits scaled by total assets  
 Smooth\_1 : A dummy variable is coded 1 if smoother, 0, otherwise.

It can be seen that nationality and firm size are statistically significant in t tests of their association with smoothing ( $p=0.042$  and  $p=0.018$ , respectively). In Mann-Whitney U tests, those variables and size are also significant ( $p=0.042$ , and  $p=0.002$ , respectively). However, none of the other variables are significantly different across smoothers and non-smoothers.

To investigate the results further in a multivariate context, logit analyses are performed. The logit analyses are employed for each sub sample (Australia and US data) and also in particular for a period in which it is believed that positive/negative macro economic

growth can affect the incidence of income smoothing (i.e., 1994). The results are summarised in Table 5 and Table 6. Table 5 and 6 provide logit results using several multivariate models. The first includes the main effects for the presence of an audit committee and the use of a top tier external auditor, but not their interaction. The second model includes their interaction and not their main effects. Table 5 Panel A also reports the expanded model which includes both the main and interaction effects. The predictive accuracy of the model ranges from around 58% to 64.50%.

Table 5

## Panel A Logit Analysis of explanatory variables associated with smoothing in the period between 1993 - 1995

Dependent variable: Smooth\_1

Variable	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall % Correctly
Prediction sign	-	-	+	+	+	+	-	-				
<b>Pooled data (n=2402)</b>												
(1) B	0.049400	-0.245900	0.129900	0.263000	0.256100	0.072500	-	-0.044000	-0.363900	14.653000	0.040700	58.20
p (1-tailed)	(0.435650)	(0.012750)	(0.010150)	(0.103800)	(0.011650)	(0.320200)	-	(0.406950)	(0.168550)			
(2) B	-	-	0.115300	0.245500	0.253900	0.047100	-0.197000	-0.053100	-0.272600	13.004000	0.043000	58.16
p (1-tailed)	-	-	(0.018850)	(0.116950)	(0.011500)	(0.364350)	(0.032550)	(0.387850)	(0.135300)			
<b>Aus data (n=335)</b>												
(1) B	0.340100	-0.637200	-0.180600	-0.732500	-0.119000	-	-	-5.848400	2.287900	15.573000	0.016200	64.44
p (1-tailed)	(0.152950)	(0.035650)	(0.200700)	(0.202450)	(0.335250)	-	-	(0.032700)	(0.017100)			
(2) B	-	-	-0.172900	-0.491500	-0.147800	-	-0.106300	-2.811900	1.868100	8.674000	0.122800	63.08
p (1-tailed)	-	-	(0.183400)	(0.253200)	(0.282250)	-	(0.346650)	(0.078350)	(0.024000)			
(3) B	0.330700	-0.646100	-0.180900	-0.732300	-0.118600	-	0.012500	-5.848000	2.295300	15.573000	0.029300	64.44
p (1-tailed)	(0.305750)	(0.155300)	(0.200850)	(0.202550)	(0.336100)	-	(0.493300)	(0.032650)	(0.024500)			
<b>US data (n=2067)</b>												
B	-	-0.189200	0.152400	0.328500	0.338300	-	-	0.180500	-0.524600	14.459000	0.012900	58.06
p (1-tailed)	-	(0.053250)	(0.004650)	(0.063900)	(0.003400)	-	-	(0.219550)	(0.023300)			

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.

AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.

SIZE : Log10 of Total Assets

LEV : Total Liabilities scaled by Total Assets

IND : A dummy variable is coded 1 for mining firms, 0, otherwise.

NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.

AC\_AUD : A dummy variable is coded 1 if firms have AC and top tier auditors, 0, otherwise.

GROWTH : Curr year's operating profits (op) - prior year's op scaled by tot assets

Smooth\_1 : 1 if  $|Target\ Y - Y| < |Target\ Y - NDE|$ , 0, otherwise.

Table 5

Panel B

## Logit Analysis of explanatory variables associated with smoothing in 1994

Dependent variable: Smooth\_1

Variable	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall % Correctly
Prediction sign	-	-	+	+	+	+	-	-				
<b>Pooled data (n=787)</b>												
(1) B	0.391000	-0.147200	-0.047000	0.798400	0.190600	0.615200	-	-0.075900	-0.231000	10.813000	0.147000	58.23
p (1-tailed)	(0.253200)	(0.222550)	(0.313300)	(0.016000)	(0.169150)	(0.016050)	-	(0.391050)	(0.371900)			
(2) B	-	-	0.044100	0.750300	0.553700	0.192000	-0.331700	-0.126100	-0.094700	8.683000	0.192200	57.65
p (1-tailed)	-	-	(0.324100)	(0.022000)	(0.003100)	(0.222100)	(0.040450)	(0.323800)	(0.413500)			
<b>Aus data (n=101)</b>												
(1) B	0.149300	-1.519400	0.319000	0.198200	1.017300	-	-	-21.172200	0.268500	17.259000	0.008400	71.59
p (1-tailed)	(0.414650)	(0.027150)	(0.251600)	(0.458500)	(0.049000)	-	-	(0.002000)	(0.457100)			
(2) B	-	-	0.382600	-0.372600	0.676200	-	-0.462400	-16.617700	-0.724000	11.020000	0.051000	68.69
p (1-tailed)	-	-	(0.177800)	(0.405600)	(0.101400)	-	(0.190250)	(0.003050)	(0.362500)			
(3) B	0.412600	-1.278400	0.317700	0.192700	1.009300	-	-0.335200	-21.270200	0.104500	17.301000	0.015600	71.59
p (1-tailed)	(0.387550)	(0.180000)	(0.252550)	(0.459600)	(0.050900)	-	(0.418250)	(0.001950)	(0.968000)			
<b>US data (n=686)</b>												
B	-	-0.020100	-0.095600	0.789900	0.130200	-	-	-0.045300	0.311300	4.744000	0.447900	55.84
p (1-tailed)	-	(0.460600)	(0.168450)	(0.019350)	(0.273550)	-	-	(0.434650)	(0.243900)			

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.

AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.

SIZE : Log10 of Total Assets

LEV : Total Liabilities scaled by Total Assets

IND : A dummy variable is coded 1 for mining firms, 0, otherwise.

NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.

AC\_AUD : A dummy variable is coded 1 if firms have AC and top tier auditors, 0, otherwise.

GROWTH : Curr year's operating profits (op) - prior year's op scaled by tot assets

Smooth\_1 : 1 if |Target Y- Y| &lt; |Target Y-NDE|, 0, otherwise.

Panel A in Table 5 illustrates that during 1993 - 1995, auditor quality is significantly negatively associated with smoothing for Australian firms ( $p=0.0357$ ) as predicted, and the association is only marginally insignificant for US firms ( $p=0.0533$ ). These results suggest top tier auditors are more likely to mitigate management's opportunities to smooth earnings, compared with non top tier auditors. For Australian firms, other variables are not significant, except the growth ratio in one model only ( $p<0.05$ ). In contrast, US mining firms and US large firms are more likely to be smoother than US non-mining or small firms ( $p<0.001$ ).

Table 5 Panel A also reports that the interaction between audit committees and external auditors (i.e., top tier auditors) is not significantly associated with the incidence of smoothing for Australian firms. A pooled model is not reported because it would be influenced by US firms which all have audit committees.

The third model in Table 5 Panel A for the Australian sample reports the results from testing hypotheses H1, H2, H3, and H4 simultaneously. None of the key variables (AUD COMM, AUD, AC\_AUD, NATION) is significant in any of the models.

Young (1998) finds evidence that contrasting periods of economic performance in 1988 and 1991 affect income smoothing for industrial firms in the UK. To investigate whether income smoothing is influenced by macro economic growth in 1994, a year of economic growth, logistic analysis is also performed using data from 1994 only.

It can be seen in Panel B Table 5, for the pooled sample, that nationality is significant at  $p < 0.01$  in the first model. This may indicate that economic growth in Australia gave incentives for managers to smooth earnings. For Australian firms, auditor quality and industry categorisation are statistically significant ( $p < 0.05$ ). Audit committees are insignificant both for the pooled sample and the Australian sample. Only leverage is significant for the US sample. The overall hold-out accuracy rate for the Australian sample is improved from previous models in panel A (i.e., 71.59% & 68.69%, compared with 64.441% & 63.08%). In contrast, the logistic regression results using US data are not significant.

The results indicate that income smoothing may be affected by macro economic conditions in certain periods and may vary across industry. In Table 5 Panel A using 1993-1995 data, industry classification coefficient is significant and positive as expected, but this occurs for the pooled sample and the US sample only. However, when the analysis was conducted using 1994 data (Panel B Table 5), it is only for Australian firms that there are any significant results. In the first and third models, Australian firms that smooth earnings in 1994 are more likely come from the mining industry ( $p < 0.05$ ) and to have negative growth during 1994 ( $p < 0.01$ ).

Table 6 reports logistic regression models within different industry samples: mining and non-mining industries using the pooled sample. In the non-mining sample (Panel A), only control variables (SIZE, LEV, GROWTH) are significant at  $p < 0.05$ . Approximately 58% of firms are correctly classified according to whether they smooth income. For the mining sample, top tier designation of external auditors is negatively

associated with smoothing (Panel B) as is the combination of top tier external auditor and use of an audit committee ( $p < 0.05$ ). Approximately 61% of firms are correctly classified according to whether they smooth income.

**Table 6**                      **Logit Analysis of explanatory variables associated with smoothing between 1993 - 1995**  
**Dependent variable: Smooth\_1**

**Panel A**                      **Sample of firms in non-mining industries**

Variable	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall % Correctly
Prediction sign	-	-	+	+	+	+	-	-				
<b>Pooled data (n=1811)</b>												
B	0.134100	-0.181200	0.136900	0.464200	-	0.243500	-	1.415500	-0.711400	19.895000	0.002900	58.16
p (1-tailed)	(0.366750)	(0.080900)	(0.012500)	(0.028100)	-	(0.110150)	-	(0.009050)	(0.065500)			
B	-	-	0.127300	0.450400	-	0.183200	-0.132100	1.460500	-0.562600	19.011000	0.001900	58.23
p (1-tailed)	-	-	(0.018250)	(0.031500)	-	(0.144950)	(0.148600)	(0.007650)	(0.021300)			

**Panel B**                      **Sample of firms in mining industries**

**Pooled data (n=591)**

B	-0.115500	-0.415800	0.188800	-0.267800	-	-0.158100	-	-0.363100	0.175200	8.055000	0.234100	61.44
p (1-tailed)	(0.408750)	(0.028500)	(0.112000)	(0.259850)	-	(0.296550)	-	(0.089000)	(0.400150)			
B	-	-	0.142700	-0.259200	-	-0.128800	-0.349100	-0.391100	0.204500	7.197000	0.206400	61.84
p (1-tailed)	-	-	(0.165350)	(0.259100)	-	(0.302200)	(0.046250)	(0.070100)	(0.351450)			

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.  
AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.  
SIZE : Log10 of Total Assets  
LEV : Total Liabilities scaled by Total Assets  
IND : A dummy variable is coded 1 for mining firms, 0, otherwise.

NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.  
AC\_AUD : A dummy variable is coded 1 if firms have AC and top tier auditors, 0, otherwise.  
GROWTH : Curr year's operating profits (op) - prior year's op scaled by tot assets  
Smooth\_1 : 1 if |Target Y- Y| < |Target Y-NDE|, 0, otherwise.



To examine whether firms use income increasing/decreasing discretionary accruals rather than income smoothing, logistic analysis is conducted with a dummy variable (Inc\_da). This variable takes the value 1 if the firm has positive discretionary accruals; 0, otherwise. As summarised in Table 7, auditor quality (AUD) is negatively associated with earnings management for both the pooled and the US samples. The presence of audit committees and nationality of firms are not significant, and the combination of auditor quality and the presence of audit committees is marginally insignificant in its association with aggressive reported earnings ( $p=0.0681$ ). Some control variables are also significantly associated with positive discretionary accruals for the US and pooled samples. For the Australian sample, no variables are significantly associated with positive discretionary accruals.

**Table 7**      **Logit Analysis of explanatory variables associated with positive discretionary accruals in the period between 1993 - 1995**  
**Dependent variable: Inc\_da**

Variable	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall % Correctly
Prediction sign	-	-	-	+	?	+	-	?				
<b>Pooled data (n=2402)</b>												
B	0.046500	-0.311800	0.096800	-0.605700	-0.351600	0.140400	-	0.199300	-0.029000	26.003000	0.000500	54.79
p (1-tailed)	(0.438450)	(0.002100)	(0.039850)	(0.001800)	(0.000850)	(0.177050)	-	(0.148050)	(0.469000)			
<b>Aus data (n=335)</b>												
B	-0.066600	-0.461000	0.127900	0.105100	0.060500	-	-	-0.783300	-0.308700	4.314000	0.634200	53.17
p (1-tailed)	(0.416750)	(0.072750)	(0.532000)	(0.449600)	(0.410400)	-	-	(0.224550)	(0.379200)			
B	-	-	0.083100	0.029500	0.034100	-	-0.387100	-0.628600	-0.143500	3.986000	0.551500	54.15
p (1-tailed)	-	-	(0.325300)	(0.483450)	(0.445400)	-	(0.068050)	(0.198550)	(0.435800)			
<b>US data (n=2067)</b>												
B	-	-0.299900	0.091100	-0.671800	-0.438000	-	-	0.434600	0.071600	27.602000	0.000000	55.03
p (1-tailed)	-	(0.005050)	(0.057500)	(0.000900)	(0.000250)	-	-	(0.038800)	(0.391700)			

AUD COMM : A dummy var is coded 1 if there is an ac, 0, otherwise.

AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.

SIZE : Log10 of Total Assets

LEV : Total Liabilities scaled by Total Assets

IND : A dummy variable is coded 1 for mining firms, 0, otherwise.

NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.

AC\_AUD : A dummy var is coded 1 if firms have audit committees and top tier auditors, 0, otherwise.

GROWTH : Current year's operating profits (op) - prior year's op scaled by total assets

Inc\_da : A dummy variable is coded 1 if DA>0, 0, otherwise.

### **5.3 Discussion**

The results provide evidence that audit committees alone do not mitigate earnings management (i.e., income smoothing). So, hypothesis H1 is not supported. One possible explanation is that audit committees are often formed for the purpose of appearances and as having an image of forestalling regulations and quieting the press rather than to enhance stockholders' control on management (see Menon and Williams, 1994; Bradbury, 1990). Therefore, audit committees do not directly control how management smooths earnings.

Corporate governance literature (e.g., A Guide to Audit Committees) mentions that there are several aspects that influence the effectiveness of audit committees to monitor management, such as the composition of audit committee membership<sup>22</sup>, the activity of audit committees which can be represented by numbers of meetings attended, and the skill of the members. In practice, time constraints and lack of competence can reduce the effectiveness to monitor and to oversee management activities.

Menon and Williams (1994) argue that the formation of an audit committee does not mean that the board actually relies on the audit committee to improve its monitoring ability. Their argument can be explained by using institutional theory. Institutional theory suggests that certain practices within a culture take on a "rulelike status". Individuals or organisations within the culture that conform to these practices benefit through increased stability and enhanced survival prospects. These benefits are such

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<sup>22</sup> The Bosch Committee suggested that audit committees should comprise at least a majority of independent Non Executive Directors.

that the individual or organisation is willing to forego alternative practices that may result in increased efficiency through better control (Meyer and Rowan, 1977).

Applying this to audit committees, it suggests that the mere existence of an audit committee is sufficient for a company to receive benefits from its formation by obtaining acceptance from the business community. It is not necessary for the committee to provide any functional benefit to the company (see Arkley-Smith, 1999). In the Australia context, the ASX in 1995 issued a listing rule requiring companies to disclose the existence of an audit committee, including disclosure of the reasons for not having an audit committee if no such committee existed. So audit committee formation may have achieved a “rulelike status” within the business community.

The results support hypothesis H2, that auditor quality is more likely to lessen the occurrence of income smoothing. Previous studies of earnings management have shown that auditor quality is associated with reducing earnings manipulation, especially aggressive reported earnings. The results of this study support arguments that top tier auditors are concerned with income smoothing since they have more to lose from damage to their reputation for any type of earnings manipulation than non-top-tier external auditors.

The outcomes of the tests also indicate that for Australian firms, smoothing activity is more associated with top tier auditor designation than is US firms’ smoothing activity. This can be seen in Panel A Table 5 by comparing the coefficients on AUD (i.e., -0.6372 and -0.1892, respectively, with  $p < 0.05$  and  $p < 0.10$ ). These results support

Porter's conjectures, that the auditors' responsibility to detect fraud appears to be more significant to auditors in the US, than for auditors in Australia. If Porter's conjecture holds, it is to be expected that all US auditors play a role in mitigating income smoothing, whereas in Australia that effect would be strongest for audit firms with US affiliations (i.e., top tier external auditors).

The interaction of audit committees and top tier auditors does not significantly affect the mitigation of income smoothing for Australian firms. Hence, hypothesis H3 is not supported. The insignificant results of that are probably caused by the strong influence of image value in audit committee formation. Since the board size and dominant personality were strongly significant for audit committee formation among Australian firms, directors may seek to conform to the requirement of their professional groupings and form an audit committee once board size exceeds four<sup>23</sup> (see Arkley-Smith, 1999). Arkley-Smith (1999) defines dominant personality as independent chairpersons who are expected to place pressure on an entity to conform to the "rules" advocated by professional directors' associations. If this is the case, it may suggest that members of audit committees are not greatly concerned about income smoothing.

The results of this study suggest that the interaction between the combination of having an audit committee members and top tier auditor does not necessarily enhance the oversight of management's financial reporting.

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<sup>23</sup> See for example Bosch's report (1995) which mentions that groups representing directors have argued for the mandatory formation of an audit committee where board size exceeds four directors.

The results do not support arguments that Australian firms smooth income more than US firms. Hypothesis H4 is significantly supported by univariate tests. However, in multivariate tests, the results (NATION) are insignificant.

The positive sign on the industry variable indicates mining firms are more likely to smooth earnings than non-mining firms, but the results are mixed in terms of their significance. In the period 1993 to 1995, US mining firms were more likely to smooth earnings than US non-mining firms, but the result does not hold for 1994. For the Australian sample, there is no significant association. In contrast, when the sample period is narrowed to the year 1994, two models indicate that Australian mining firms were more likely to smooth earnings than Australian non-mining firms.

In a US context, large firms tend not to smooth earnings more than small firms. The result is inconsistent with previous studies that indicate large firms are more complicated and have greater opportunities for income smoothing despite potentially closer monitoring by audit committees and top tier external auditors (see Moses, 1987; Chaney and Jeter, 1997). Since large firms have a wide array of discretionary revenues and expenditures, they are more likely to have larger discretionary accruals (see Chaney and Jetter, 1997). However, they are more likely to be subject to scrutiny and may use “real” techniques, such as the timing of transactions, to smooth reported earnings. Australian firms that smooth income tend to have lower growth returns on

assets (Table 5) but growth is unassociated with their use of positive accruals (Table 7)<sup>24</sup>.

Since lower growth indicates firms in a weak financial position, compared to firms with higher growth, it can be argued that managers of firms in a weak financial position are more likely to use income smoothing discretionary accruals to improve the firm's apparent financial stability. The results are consistent with Chaney and Jeter's (1997) findings that high growth firms are less likely to employ income smoothing than lower growth firms. The results suggest that more mature Australian firms are more likely to smooth earnings than new firms.

An alternative argument is that high growth firm managers have incentives to increase reported earnings to signal their growth potential. This argument is inconsistent with the findings for Australian firms. However, it is consistent with the US results: growth is insignificant for US firms except in Table 7 where there is a positive association between growth and income increasing discretionary accruals. Leverage is not significantly associated with income smoothing in this study.

In conclusion, the results indicate that top tier auditors can mitigate income smoothing, particularly in Australia. Other predictions are not supported.

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<sup>24</sup> This study refers to positive growth rather than negative growth since high returns on assets can increase managers performance, then increase their bonuses.

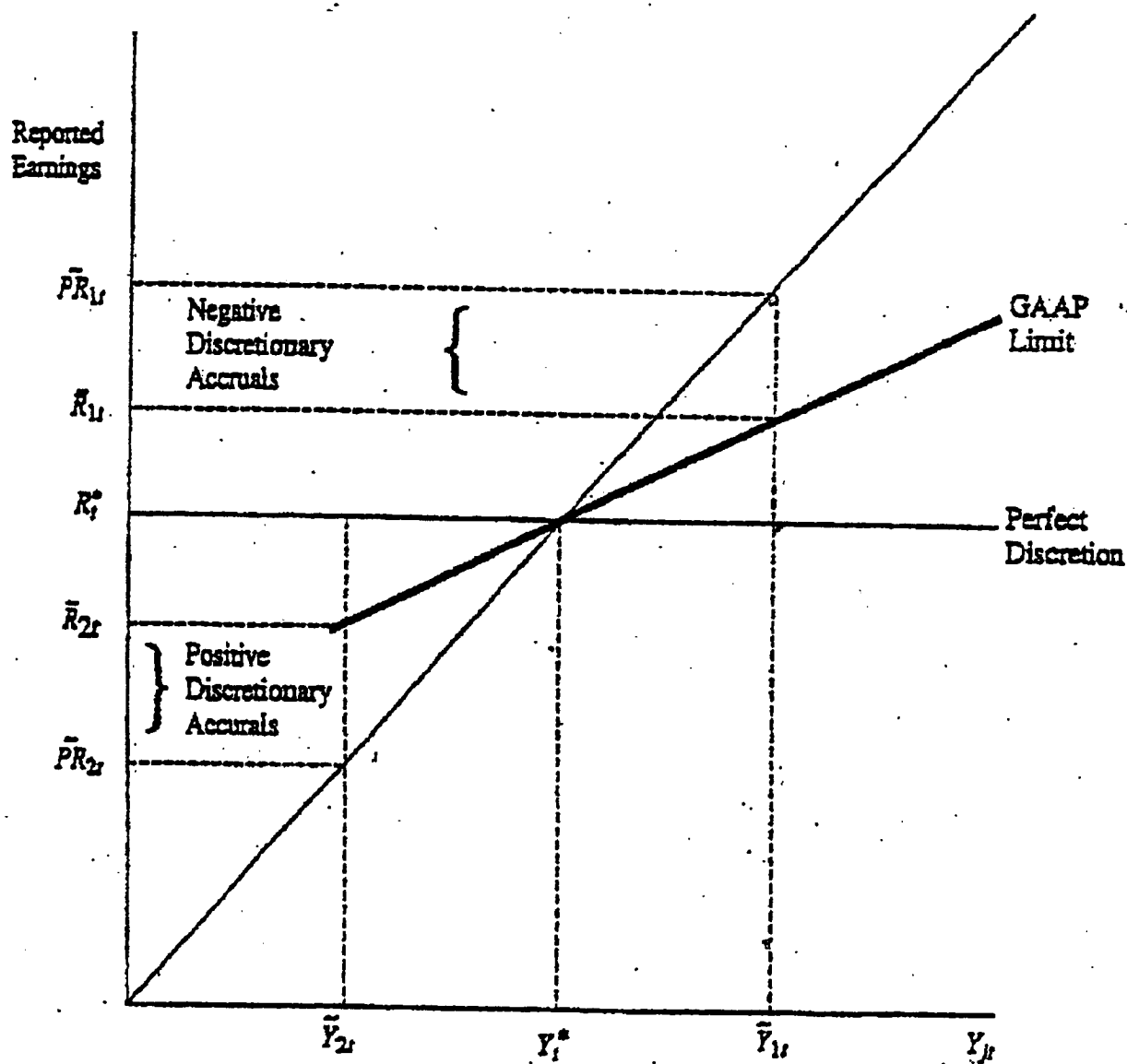
#### ***5.4 Sensitivity analysis: An alternative test of income smoothing***

Another measurement of smoothing was also employed to examine whether firms engaged in income smoothing. Accounting standards permit some discretion in the recognition of certain expenses and revenues. When managers use their discretion to signal positive future earnings, earnings management is viewed positively. On the other hand, if managers use their discretion to manipulate earnings for their own benefit (i.e., transfer of wealth through a bonus scheme, for example), discretion is viewed negatively. Under the permanent earnings hypothesis, the two competing motivations are not necessarily in opposition (Chaney et al., 1998).

Chaney et al. (1998) argue that smoothing represents managers' efforts to manage reported earnings closer to managers' assessment of permanent earnings (i.e., target earnings/potential earnings) than in the absence of discretionary accruals. When target earnings are less than pre-managed earnings, which are limited by accounting standards, managers will use negative discretionary accruals to achieve reported earnings closer to target. On the other hand, when target earnings are higher than pre-managed earnings, it means that managers use positive discretionary accruals.



**Figure 2:** The use of discretionary accruals to adjust reported earnings to permanent earnings, subject to GAAP limitations for measuring income smoothing.



Notes:  $Y_t^*$ : permanent earnings for year  $t$ ;  $R_t^*$ : reported earnings equal to permanent earnings for year  $t$ ;  $\bar{PR}_{jt}$ : potential reported earnings for year  $t$  for scenario  $j$ ;  $\bar{R}_{jt}$ : actual reported earnings for year  $t$  for scenario  $j$ ;  $Y_{jt}$ : pre-managed earnings for year  $t$  for scenario  $j$ .

Source: Taken from Chaney, Paul K., D.C. Jeter, and C.M. Lewis, 1998, The Use of Accruals in Income Smoothing: A Permanent Earnings Hypothesis. *Advances in Quantitative Analysis of Finance and Accounting* 6, 107.

Figure 2 depicts managers' use of discretionary accruals to move earnings in the direction of their assessment of permanent earnings. In period  $t$ , the earnings are  $Y_{1t}$ . In this case, managers recognise that the earnings they might report ( $PR_{1t}$ ) would be overstated and would lead to an unappealing downward trend in future periods. They would like to report  $R_t$  but are limited by GAAP. Therefore, managers use discretion without breaching GAAP and report  $R_{1t}$ . Discretionary accruals will be negative and are represented graphically as  $R_{1t} - PR_{1t}$ . In contrast, when the earnings for period  $t$  are  $Y_{2t}$ , the managers realise that the current period includes a net negative transitory component, and they report positive discretionary accruals to offset (in part) that component. They can only report  $R_{2t}$  rather than  $R_t$  because of GAAP limitations. This is still higher than the potential reported earnings  $PR_{2t}$ , so discretionary accruals are represented as  $R_{2t} - PR_{2t}$ . Smoothing can be captured by looking at reported earnings ( $R_{1t}$  and  $R_{2t}$ ), which are closer to the permanent earnings assessment, than the potential reported earnings ( $PR_{1t}$  and  $PR_{2t}$ ).

Table 8 provides a 2x2 distribution of the numbers of firms in the sample by the sign of discretionary accruals and the predictive indicator variable, *Smooth1b*. *Smooth1b* is set equal to 1 if pre-managed earnings exceed the target earnings<sup>25</sup>. In this case if managers smooth income, it is expected that they use negative discretionary accruals. If *Smooth1b* is zero, target income exceeds pre-managed earnings, and if managers smooth income, they will use positive discretionary accruals.

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<sup>25</sup> Chaney et al. (1998) use prior period's earnings as target earnings and a sum of cash from operation & non discretionary accruals to calculate earnings before discretionary accruals.

The distributions in Table 8 for each of the pooled, Australian and US samples confirm that managers do use discretionary accruals to smooth income ( $p < 0.000$ ).

**Table 8**      **Distribution of firms by sign of discretionary accruals and predictive indicator variable Smooth\_1b**

	Pooled sample			Aus Data			US data		
	Discretionary Accruals		Totals	Discretionary Accruals		Totals	Discretionary Accruals		Totals
	Negative	Positive		Negative	Positive		Negative	Positive	
Smooth1b = 0 (pre-managed earnings below target earnings)	451 18.78%	751 31.27%	1202 50.04%	47 14.03%	116 34.63%	163 48.66%	404 19.55%	635 30.72%	1039 50.27%
Smooth1b = 1 (pre-managed earnings above target earnings)	811 33.76%	389 16.19%	1200 49.96%	116 34.63%	56 16.72%	172 51.34%	695 33.62%	333 16.11%	1028 49.73%
Totals	1262 52.54%	1140 47.46%	2402 100.00%	163 48.66%	172 51.34%	335 100.00%	1099 53.17%	968 46.83%	2067 100.00%
Chi-square	217.6435			49.93307			171.21809		
Prob (1-tailed)	0.000000			0.000000			0.000000		

Notes:

Smooth1b : 1 If pre-managed earnings >Target income; 0 , otherwise

The logistic regression reported in Table 9 shows signs of the difference between target income and pre-managed earnings is significant in predicting signs of discretionary accruals for both Australian and US data. Firms appear to use their discretionary accruals to smooth reported earnings. For Australian firms, auditor top tier designation and the presence of an audit committee are associated negatively with the use of positive discretionary accruals, but only in combination. Neither is significant on its own. For US firms, the use of a top tier external auditor is negatively associated with the use of positive discretionary accruals. An interesting finding from this study is that, while all samples of firms appear to smooth income, income increasing accruals are positively associated with firm size, in contrast to the political cost hypothesis. Similar results occur that in contrast to positive predicted sign, income increasing accruals are negatively associated with leverage.

**Table 9      Logit Analysis of explanatory variables associated with positive discretionary accruals in the period between 1993 - 1995**  
**Dependent variable: Inc\_da & independent variable: Smooth1b**

Variable	SMOOTH1b	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall %
Prediction sign	-	-	-	-	+	?	+	-	+				
<b>Pooled data (n=2402)</b>													
B	-1.5717	-0.072800	-0.281200	0.478100	-0.993300	-0.145100	-0.076000	-	0.423400	-0.836700	288.755000	0.000000	66.02
p (1-tailed)	(0.000000)	(0.410100)	(0.007600)	(0.000000)	(0.000000)	(0.113450)	(0.318550)	-	(0.024250)	(0.018200)			
<b>Aus data (n=335)</b>													
B	-2.395400	-0.405700	-0.386400	0.944300	-0.538300	0.412900	-	-	-0.918100	-3.002600	69.683000	0.000000	71.13
p (1-tailed)	(0.000000)	(0.133300)	(0.147300)	(0.000100)	(0.284800)	(0.088300)	-	-	(0.179300)	(0.005300)			
B	-2.385900	-	-	0.941000	-0.488900	0.404300	-	-0.486200	-0.771900	-3.318500	75.371000	0.000000	70.77
p (1-tailed)	(0.000000)	-	-	(0.000050)	(0.270000)	(0.078450)	-	(0.049200)	(0.189600)	(0.001000)			
<b>US data (n=2067)</b>													
B	-1.495600	-	-0.271300	0.446300	-1.040100	-0.245800	-	-	0.774300	-0.780000	236.799000	0.000000	64.83
p (1-tailed)	(0.000000)	-	(0.013800)	(0.000000)	(0.000000)	(0.032400)	-	-	(0.002750)	(0.002850)			

AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, othw.  
AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.  
IND : A dummy variable is coded 1 for mining firms, 0, otherwise.  
Inc\_da : A dummy variable is coded 1 if DA>0, 0, otherwise.  
GROWTH : Current year's operating profits (op) - prior year's op scaled by total assets

SIZE : Log10 of Total Assets  
LEV : Total Liabilities scaled by Total Assets  
NATION : A dummy var is coded 1 for Aus firms, 0, otherwise.  
AC\_AUD : A dummy var is coded 1 if firms have ac and top tier auditors, 0, otherwise.  
Smooth1b : 1 if pre-managed earnings >Target income; 0 , otherwise

### ***5.5 Sensitivity analysis: Unrestricted US sample***

Prior tests using US firms include only firms in industries corresponding to the industry composition of the Australian sample. Tests using all industry groups of available US data are also conducted. This sample consists of 43 industries, including 14 industries in the previous US sample. Multivariate tests are reported in Table 10. The equivalent table using the restricted sample is Table 5. Many results are inconsistent with previous results (see Table 5 panel A). Since the difference is driven entirely by the different US sample, the following analysis focuses on the US firms. The role of top tier external auditors ceases to be significant in the expanded sample, while leverage and growth in returns on assets become significantly positively associated with smoothing. In the pooled sample, the nationality of firms becomes significant with the positive predicted sign. This indicates Australian firms are more likely to smooth earnings than US firms. However, the significance of nationality is caused by the inclusion of all industry groups for the US sample, in which more US firms do not smooth earnings. It appears that income smoothing is less common in certain industries than others, and that the industries that do not smooth are under-represented in Australia.

**Table 10 Logit Analysis of explanatory variables associated with smoothing in the period between 1993 - 1995**  
**Dependent variable: Smooth\_1, with all industries for US sample**

Variable	AUD COMM	AUD	SIZE	LEV	IND	NATION	AC_AUD	GROWTH	Intercept	Chi-Square	p (2-tailed)	Overall % Correctly
Prediction sign	-	-	+	+	+	+	-	-				
<b>Pooled data (n=9207)</b>												
(1) B	0.076200	-0.054600	0.075700	0.195900	0.285100	0.262000	-	0.281600	-0.428700	37.003000	0.000000	53.57
p (1-tailed)	(0.401100)	(0.170100)	(0.002850)	(0.023000)	(0.001400)	(0.036800)	-	(0.010050)	(0.091850)			
(2) B	-	-	0.072200	0.194300	0.289600	0.252200	-0.042900	0.282300	-0.345100	38.514000	0.000000	53.51
p (1-tailed)	-	-	(0.004150)	(0.023650)	(0.001100)	(0.022300)	(0.224950)	(0.010050)	(0.001950)			
<b>Aus data (n=335)</b>												
(1) B	0.340100	-0.637200	-0.180600	-0.732500	-0.119000	-	-	-5.848400	2.287900	15.573000	0.016200	64.44
p (1-tailed)	(0.152950)	(0.035650)	(0.200700)	(0.202450)	(0.335250)	-	-	(0.032700)	(0.017100)			
(2) B	-	-	-0.172900	-0.491500	-0.147800	-	-0.106300	-2.811900	1.868100	8.674000	0.122800	63.08
p (1-tailed)	-	-	(0.183400)	(0.253200)	(0.282250)	-	(0.346650)	(0.078350)	(0.024000)			
<b>US data (n=8872)</b>												
B	-	-0.028600	0.080200	0.209700	0.352200	-	-	0.393600	-0.410700	33.207000	0.000000	53.59
p (1-tailed)	-	(0.312050)	(0.001900)	(0.017050)	(0.000350)	-	-	(0.001250)	(0.000350)			
<div> <div> AUD COMM : A dummy variable is coded 1 if there is an audit committee, 0, otherwise.  AUD : A dummy var is coded 1 if firm audited by top tier auditors, 0, otherwise.  SIZE : Log10 of Total Assets  LEV : Total Liabilities scaled by Total Assets  IND : A dummy variable is coded 1 for mining firms, 0, otherwise. </div> <div> NATION : A dummy variable is coded 1 for Australian firms, 0, otherwise.  AC_AUD : A dummy variable is coded 1 if firms have AC and top tier auditors, 0, otherwise.  GROWTH : Curr year's operating profits (op) - prior year's op scaled by tot assets  Smooth_1 : 1 if  Target Y- Y  &lt;  Target Y-NDE , 0, otherwise. </div> </div>												



### ***5.6 Conclusion***

The results do not unambiguously support the hypotheses. There are national, temporal and industry differences in the association of income smoothing with corporate governance through the use of audit committees and top tier external auditors.

## **Chapter 6: Summary and Conclusion**

### ***6.1 Introduction***

Income smoothing is driven by incentives to mitigate volatility in reported earnings, e.g., reducing volatility around target earnings. In the Australian context, there is strong evidence that large listed companies are actively engaged in income smoothing. To date, however, relatively little attention has been paid to the way in which income smoothing might be affected by auditor quality or the presence of an audit committee. Porter's (1994) discussion about international differences between Australia and the US auditing standards and the requirement for audit committee formation also motivates this empirical study. The thesis addresses several research questions. (1) Do Australian firms artificially smooth reported earnings? (2) Does the presence of an audit committee affect the propensity of firms to smooth earnings? (3) Is audit quality associated with artificial income smoothing? (4) Are income smoothing incentives similar for Australian and US firms' managers, given that the two countries have different regulations concerning audit committee formation and responsibility to detect fraud?

### ***6.2 Regulatory background***

Australian public companies are currently not required to form audit committees, either by statute or by the Australian Stock Exchange. However, in the US, the requirement has become mandatory. In terms of auditing regulations, the auditor regulatory body has reluctantly acknowledged the duties imposed on auditors by statute and does not encourage auditors to go beyond the minimum legal requirements to detect fraud

(Porter, 1994). Furthermore, there is an opinion held by the auditing profession in Australia that management has the role of detecting financial fraud, and that detection of fraud by auditors is secondary to their primary duty of reporting whether the accounts are true or fair (Tomasic and Bottomley, 1993).

### ***6.3 Predictions of the study***

Accounting literature documents the need for audit committees and auditing. The agency costs that arise from contractual relationships, combined with information asymmetry, lead to a demand for investment in control and monitoring. Audit committees and external auditing are elements of corporate governance practices. Based upon that assumption, auditor quality and the presence of audit committees should mitigate firms' propensity to smooth earnings. Since corporate governance practices are affected by different legal and financial factors that cause them to vary, differences in those factors can create differences in focus of the respective governance systems. This leads to an assumption that since the regulatory body in the US is arguably stricter than in Australia in regards to requirements of audit committee formation and detecting fraud, Australian managers have more opportunity to smooth earnings than US managers.

### ***6.4 Method***

The study investigates the role of auditing-related corporate governance using samples of both Australian and US firms. The classification of firms as income smoothers is modelled as a function of the use of audit committees, use of top tier external auditors,

combination of both audit committee and top tier auditor, and firms' US/Australian nationality. Logit analysis is performed.

### ***6.5 Results and Conclusions***

The results indicate that firms smooth reported income. There is inconclusive evidence about whether firms' use of high quality auditors is associated negatively with the propensity for income smoothing, and there is scope for further research in relation to the role of auditors in reducing the propensity of income smoothing. For example, this study does not examine the role of second tier versus third tier auditors.

There is no evidence that audit committees alone mitigate income smoothing. The insignificant results are probably caused by the strong influence of image value in audit committee formation in an Australian context (all US firms are required to have audit committees). That argument possibly also explains why the interaction between top tier auditors and audit committees is not significant for Australian firms in association with income smoothing.

There is inconclusive evidence that, since requirements for firms to form audit committees and for auditors to detect management fraud in the US are stricter than in Australia, managers of Australian firms are more likely to smooth earnings than managers of US firms. Macro economic conditions and industry types are more likely to give incentives for managers to smooth earnings.

The results have implications for the effectiveness of the alternative forms of corporate governance. While it is possible that external auditing deters income smoothing, there is little evidence supporting arguments that use of a top tier external auditor and/or an audit committee reduces the likelihood that firms will smooth earnings. However, there is a negative association between the use of income increasing earnings management and top tier external auditor designation or combination of top tier external auditor and presence of an audit committee.

These findings can inform financial statement users about exercising caution when interpreting financial data and disclosure. There is a difference between having an audit committee and having an effective audit committee. In deciding the extent to which they should monitor and control managers' actions in order to protect external parties such as present and potential investors, regulators can also be guided by the weak results. Whether the effectiveness of audit committees could be enhanced if regulators ensure that the objectives and responsibilities of the audit committee are clearly defined in a written assertion, warrants investigation. Finally, the findings may contribute insight into international differences in reporting practices. The results do not provide strong evidence that international harmonisation of auditing requirements would reduce the incidence of income smoothing. In this study, for example, the insignificance of firm nationality in predicting income smoothing indicates that the US mandatory requirement of having an audit committee is not associated with reduced income smoothing or less use of positive discretionary accruals.

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